Minutes of the 315th meeting of the State Level Expert Appraisal Committee held on 29th November 2021 through Video Conference (VC) on National Informatics Centre (NIC).

In the wake of recent crisis of COVID-19, lockdown situation, the agenda of the present meeting was mailed to expert Committee in advance and a Video conference meeting on NIC was organised in this regard on 29/11/2021 at 13.30 hrs.

Following members joined the meeting:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC
2.	Dr. S. C. Pant, Vice Chairman, SEAC
3.	Dr. M. N. Patel, Member, SEAC
4.	Shri D. C. Chaudhari, Member, SEAC
5.	Shri J. K. Vyas, Member, SEAC
6.	Shri Anand Zinzala, Member, SEAC
7.	Shri B. M. Tailor, Member, SEAC
8	Shri A. V. Shah, Secretary, SEAC

The Committee considered the applications made by project proponents, additional details submitted as required by the SEAC/SEIAA and details furnished in the Form-1, PFR, EMP reports etc. The applicants made presentations on the activities to be carried out along with other details furnished in the Form-1, PFR, EIA-EMP reports and other reports.

1.	SIA/GJ/IND2/220563/2021	**M/s. M/s. BENZMARK PHARMACHEM LLP Plot No.- 204-B/2/2, Panoli Industrial Estate, Tal- Ankleshwar, Dist: Bharuch - 394116 (Gujarat)**	Appraisal

Category of the unit: **5 (f)**

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND2/220563/2021

1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	17.07.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Ozone Enviro Tech
1.8. SEAC Meeting No. and Date:	315th meeting dated 29.11.2021
1.9. Compliance of Existing EC & CCA	Not Applicable if New

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Sr. No.	Name of Product	CAS NO.	Quantity (MT/Month)	End Use	Remarks
GROUP-A					
1	2-Chloroacetamide	79-07-2	20.0	Intermediate of Cetrizine	**Unit is proposed to mfg either individual or total production of (Product No.- 1 to 28) shall not exceed 20.0 MT/Month.**
2	1-(4-Chlorobenzhydryl)piperazine	303-26-4		Intermediate of Cetrizine	
3	Imminodibezyl	494-19-9		Intermediate of Carbamazepine	
4	(-)-1-[(4-Chlorophenyl)phenyl methyl]-4-[(4-methylphenyl) sulfonyl] piperazine	163837-56-7		Intermediate of Levocetrizine	
5	6-Hydroxy-2(1H)-3,4-dihydroquinolinone	54197-66-9		Inte 3 rmediate of Cilostazol	
6	1-(2,3-Dichlorophenyl)piperazine hydrochloride	119532-26-2		Intermediate of Aripiprazole	
7	4-(2-Methoxyethyl)pheno	56718-71-9		Intermediate of Metoprolol	
8	3,4-Dihydro-7-hydroxy-2(1H)-quinolinone	22246-18-0		Intermediate of Aripiprazole	
9	4 hydroxycarbazole	52602-39-8		Intermediate of Carvedilol	
10	7-Chloro-1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-quinoline-3-carboxylic Acid	86393-33-1		Intermediate of Ciprofloxacin	
11	Methyl 4-amino-5-ethylsulfonyl-2-methoxybenzoate	80036-89-1		Intermediate of Amisulpiride	
12	(2R,5S)-L-Menthol-5-(4-amino-2-oxo-1(2H)-pyrimidinyl)-1,3-oxathiolane-2-carboxylate	147027-10-9		Intermediate of Lamivudine	

13	2 methyl - 5 - nitraimidazole	696-23-1		Intermediate of Tinidazole	
14	Trans-4-Aminocyclohexanol	27489-62-9		Intermediate of Ambroxol	
15	2-Amino-3,5-dibromobenzaldehyde	50910-55-9		Intermediate of Ambroxol	
16	(S)-+2-Amino Butyramide Hydrochloride	7682-20-4		Intermediate of Levetiracetam	
17	2 - (chloromethyl)-3,5 - dimethyl - 4 - methoxy- pyridine	86604-75-3		Intermediate of Esomeprazol	
18	1,2,4-Triazolo[4,3-a]pyridin-3(2H)-one	6969-71-7		Intermediate of Trazodone	
19	1-(3-Chlorophenyl)-4-(3-chloropropyl)piperazinemonohydrochloride	52605-52-4		Intermediate of Trazodone	
20	Amlodipine Base	88150-42-9		Intermediate of Amlodipine	
21	Phthaloyl amlodipine	88150-62-3		Intermediate of Amlodipine	
22	Methyl 3-aminocrotonate	14205-39-1		Intermediate of Amlodipine	
23	Trimethyl Ortho Benzoate	707-07-3		Intermediate of Nintedanib	
24	2-[(4-(3-methoxypropoxy)-3-methyl-2-pyridinyl) methyl]thio]-1H-benzimidazole-Crude	117977-21-6		Intermediate of Rabeprazole	
25	(±)-3-(Carbamoyl Methyl)-5-Methyl Hexanoic Acid	181289-15-6		Intermediate of Pregabaline	
26	2-[4-(3-methoxypropoxy)-3-methyl-2-pyridinyl] methyl]sulfinyl]-1H-benzimidazole - Pure	117976-89-3		Intermediate of Rabeprazole	
27	4-Hydroxy Coumarine	1076-38-6		Intermediate of Warfarin	
28	(R)-(-)-3-(Carbamoyl Methyl)-5-Methyl Hexanoic Acid	181289-33-8		Intermediate of Pregabaline	
GROUP-B					
29	Tri Choloro Salicylic Acid	40932-60-3	10.0	Treat mild to moderate acne in efficient manner	**Unit is proposed to mfg either individual or total production of (Product No.-29 to**
30	Benzalkonium Chloride	8001-54-5		Antiseptic Agent	
31	Losartan potassium and its Intermediate	124750-99-8		Use in high blood pressure (hypertension)	
32	Glimepiride and its intermediate	93479-97-1		Anti Diabetic	
33	Cetrimide	8044-71-1		Antiseptic and disinfectant	
34	Chlorohexidine Base	55-56-1		anti-infective agent used also as mouthwash to prevent oral plaque	
35	Ketamine hydrochloride	6740-88-1		Used for	

				anesthesia.	**65) shall not exceed 10.0 MT/Month.**
36	Telmisartan	144701-48-4		Anti Hypertensive	
37	Pregabalin& its intermediate	148553-50-8		Anti Epileptic	
38	Chlorhexidine digluconate	18472-51-0		Germicidal mouthwash that decreases bacteria in mouth	
39	Phenylephrine Hydrochloride	61-76-7		Esophagus Problem	
40	Tadalafil	171596-29-5		Tadalafil is a medicine used to treat erection problem	
41	Polyallylamine HCl	71550-12-4		Hyperphosphatemia	
42	Atovastain calcium and its intermediate	344423-98-9		Anti Lipemic	
43	Rosuvastatin calcium	147098-20-2		Anti lipemic	
44	Phenylephrine Base	59-42-7		Decongestant	
45	Metformine	1115-70-4		Used to treat high blood sugar levels caused by type 2 diabetes	
46	Ambroxol Hydrochloride	23828-92-4		Anti-mucolytic (for cough)	
47	Bromhexine Hydrochloride	611-75-6		Anti-mucolytic (for cough)	
48	Chloramphenicol	56-75-7		Antibiotics	
49	Amlodipine Besylate	88150-42-9		Anti Hypertensive	
50	Ibuprofen	15687-27-1		Anti-inflammatory	
51	Diclofenac Sodium	15307-79-6		Anti-inflammatory	
52	Ciprofloxacine	85721-33-1		Antibiotics	
53	Quetiapine fumarate and its intemediate	111974-69-7		Antidepressant	
54	Meloxicam and its intermediate	71125-38-7		Anti-inflammatory	
55	Omperazole	73590-58-6		**Used** to treat damage from GERD	
56	Escitalopram oxalate	219861-08-2		Antidepressant	
57	Fluconazole	86386-73-4		Antifungal	
58	Febuxostat	144060-53-7		Used to prevent gout attacks	
59	Clopidogral bisulphate	120202-66-6		Used to prevent heart attack or stroke	
60	Silodosin	160970-54-7		**Used** to treat benign prostatic hyperplasia	

61	Etoricoxib	202409-33-4		Anti-inflammatory	
62	Itopride HCl	122898-67-3		Used for Chronic Gastritis	
63	Nepafenac	78281-72-8		Anti-inflammatory	
64	Dolutegravir Sodium	1051375-19-9		Antiretroviral	
65	Aspirin	50-78-2		Antiinflammatory	
66	R & D		0.1		
		Total	**30.1**		

3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
4) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
6) Committee noted the following:
   - ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
   - ✓ Effluents will be treated into ETP plant and send to Common MEE of M/s BEIL for further treatment & final disposal.
7) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020
8) PP also submitted following:
   - ✓ Revised plan with minimum 4.5 m width of both Entry & Exit side roads with revised land break up.
   - ✓ Revised CER.
   - ✓ Risk assessment of chlorine gas, Hydrogen gas, ammonia gas and bromine gas.
9) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	**Particulars**	**Details**
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Total Project
Rs. 4.5 Crores

Break-up of proposed project Cost:

Sr.	**Details**	**Project Cost**

No.		(Rs. In Crores)
1	Land and Site Development	0.65
2	Building	0.94
3	Plant and Machineries	2.00
4	Environment protection measures	0.91
	Total	**4.50**

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A-2	**Details of Environmental Management Plan (EMP)**	As below:

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Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Operating Cost (Rs. In Crore)	Maintenance Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Installation of Primary ETP & STP, Membership/NOC of CMEE	0.11	1.9152	--	1.9152
2	Air	APCM, Scrubbers & Stacks & LDAR System etc.	0.3125	--	0.034	0.034
3	Hazardous Management	Membership/NOC of TSDF, CHWIF & Cons. of Haz. Waste Storage Area.	0.03	0.2907	--	0.2907
4	Fire & Safety	PPE Kit & Fire Fighting Equipments & Fire Hydrant lines etc.	0.25	--	0.041	0.041
5	AWH Monitoring	--	0.01	--	0.01	0.01
6.	Green Belt Development	Green belt development	0.0138	--	0.012	0.012
7.	Occupational Health	First Aid Kits, medical examiners and expenses etc.	0.01	--	0.0185	0.0185
8.	CER	Year 2022-2025	0.18	--	--	--
		Total	**0.9163**	**2.2059**	**0.1155**	**2.3214**

Comments:

1. The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and

corporate social responsibility was deliberated and found satisfactory.

A-3 **Details of CER** -

PP shall carry out CER activities as below:

- ✓ Construct RCC collection tank with filtration facility for rain water harvesting
- ✓ Provide R.O. Plant with drinking water storage tank
- ✓ Solar street light set with battery backup

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B **Land / Plot ownership details:**

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/PTO/PAN1/349 on dated 08/03/2021.

B-1 **Plot area**

Total Plot area
1150.81 Sq. m.

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B-2

Area adequacy

Sr. No.	Description	Gr. Floor Area Sq. Meter	First Floor B/U Area Sq. Meter	Second Floor B/U Area Sq. Meter	Total B/U Area Sq. Meter
1	Production Area	100	100	100	300
2	Raw Material Storage Area	150.78	--	--	150.78
3	Finish Product Storage Area	25	--	--	25
4	Haz. Waste Storage Area	103.60	--	--	103.60
5	Boiler Area	70	--	--	70
6	ETP Area	50	--	--	50
7	Hydrogen Storage Area	10	--	--	10
8	Gas storage Area	20	--	--	20
9	Admin & Lab Building	23.1	23.1	23.1	69.3
10	Green Belt Area (40%) (Inside - 291 + Outside – 169 = 460)	291	--	--	291
11	Road Area	297.33	--	--	297.33
12	Security Cabin	10	--	--	10
	TOTAL	**1150.81**			

Area Adequacy table:

- We have proposed to provide 331.48 MT material storage area for R.M

	(One Week), F.G (Two Week) & Haz. Waste (90 Days) and as per proposal we require only 254 MT storage area of material area for R.M (One Week), F.G (Two Week) & Haz. Waste (90 Days). Hence, adequate area is available for proposed new Facility. **Comments:** **SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.**	
B-3	**Green belt area** Total (Sq. meter) Area in Sq. meter: 460 (Inside – 291 + Outside in GIDC – 169) % of total area: 40 (Inside – 25.28 + Outside – 14.68) **Comments:** The condition shall be given that - 1. The PP shall develop green **belt [291 m2 (25.28%) inside plant premises + 169 m2 (14.68%)** at Common Plot in Panoli GIDC **= Total: 460 Sq. m.) i.e. 40 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.	
C	**Employment generation** Total: 25 -	
D	**WATER**	
D-1	**Source of Water Supply** ➢ Panoli GIDC Water Supply. **Comments:** ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.	
D-2	**Water consumption (KLD)**	

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Category	Quantity KLD
(A) Domestic	2.0
(B) Gardening	3.0
(C) Industrial	
Process	9.1
Washing	2.0
Boiler	10.0
Cooling	3.0
Scrubber	0.8
R&D	0.2
Other Scrubber	1.0
Industrial Total	**26.1**
Total (A + B + C)	**31.1**

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Comments:

1. The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

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Category	Waste water KLD
(A) Domestic	1.5
(B) Industrial	
Process	10.7
Washing	2.0
Boiler	1.0
Cooling	0.3
Scrubber	1.2
R&D	0.2
Other Scrubber	1.0
Total Industrial waste water	**16.4**
Total [A + B]	**17.9**

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Comments:

1. The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4 Break-up of waste water disposal & facility (For Domestic)

1.5 KLD Domestic Waste Water will be treated in STP & treated wastewater will be

reused in gardening purpose within premises.

Comments:

- ✓ Domestic wastewater generation shall not exceed 1.5 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
- ✓ Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	**Quantity**	**Facility**
1	15.2 KLD	Effluents shall be treated into ETP plant and send to Common MEE of M/s BEIL for further treatment & final disposal.
2	1.2 KLD	Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.
Total	16.4 KLD	

Comments:

1. Industrial effluent shall be shall be treated as below.
   - 15.2 KLD, effluent from process, utility, washing, R&D and other scrubber shall be treated into primary ETP and then treated effluent shall be sent to CMEE of M/s BEIL through GPS fitted tanker for final treatment and disposal.
   - 1.2 KLD, Scrubber exhausting media shall be sold to end users having rule-9 permission or reused back in process as per Hazardous Waste Rules' 2016.
2. Unit shall provide STP and ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement : 500 KW
E-2	**Flue gas emission details**

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Sr. No.	**Source of emission** With Capacity	**Stack Height (meter)**	**Type of Fuel**	**Quantity of Fuel MT/ Day**	**Type of emissions i.e. Air Pollutants**	**Air Pollution Control Measures**

						(APCM)
1.	Boiler (Cap. - 2 MT/hr)	30 m	Briquette of Bio Coal	8 MT/Day	PM SO_2 NO_x	Multicyclone Separator With Water Scrubber
2.	Thermic Fluid Heater (Cap. - 4 Lakh Kcal/ Hr)		Briquette of Bio Coal	7 MT/Day		Multicyclone Separator With Water Scrubber
3.	D.G. Sets (Stand by) (Cap. - 250 KVA)	18 m	HSD	25 Liter/hr		Adequate Stack Height

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E-3	**Process gas**

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Sr No	**Specific Source of emission (Name of the Product & Process)**	**Type of Emission**	**Stack/Vent Height (meter)**	**Air Pollution Control Measures (APCM)**
1	Process Vent -1 ((2R,5S)-L-Menthol-5-(4-amino-2-oxo-1(2H)-pyrimidinyl)-1,3-oxathiolane-2-carboxylate & Omperazole)	HCl SO2	11 M	Two Stage Scrubber (Water + Alkali)
2	Process Vent -2 ((±)-3-(Carbamoyl Methyl)-5-Methyl Hexanoic Acid)	NH3	11 M	Two Stage Water Scrubber
3	Process Vent -3 (2 methyl - 5 - nitraimidazole & Omperazole)	NOx	11 M	Two Stage Alkali Scrubber
4	Process Vent -4 (2-Amino-3,5-dibromobenzaldehyde & Phenylephrine Hydrochloride)	Br2	11 M	Two Stage Water Scrubber

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E-4	**Fugitive emission** details with its mitigation measures.

- Solid raw material charging will be done through closed system to avoid fugitive emissions.
- Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading, transfer area will be collected through hoods and ducts by induced draft and controlled by scrubber/ dust collector / bad filter.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with

environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.

- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

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Sr. no.	Type/Name of Hazardous waste	Source of generation	Category and Schedule as per HW Rules.	Quantity (MT/Annum)	Management of HW
1	ETP Sludge	ETP	SCH-I/35.3	50	Collection, Storage, Transportation and Disposal at common TSDF site.
2	Discarded Drums/Bags/ Liners	Raw Materials/ Products	SCH-I/33.1	26	Collection, Storage, Transportation, Decontamination & Sale to GPCB approved vendors/ reuse /send back to supplier.
3	Used/ Spent Oil	Machineries /Utility	SCH-I/5.1	1.2	Collection, Storage, Disposal by reuse in plant machinery as lubricant or transportation & Sale to GPCB registered re-processor.
4	Distillation Residue	Distillation	SCH-I/20.3	108	Collection, Storage, Transportation and sent for co-processing in cement industries or (in case of non-operation of co-processing site) Disposal at common incineration site.
5	Spent Solvent	Process	SCH-I/28.6	4167	Collections, Storage, distillation and reuse in plant premises.
6	Spent Carbon	Process	SCH-I/28.3	7	Collection, Storage, Transportation and sent for co-processing in cement

					industries or (in case of non-operation of co-processing site) Disposal at common incineration site.
7	Organic Residue	Process	SCH-I/28.1	56	Collection, Storage, Transportation and sent for co-processing in cement industries or (in case of non-operation of co-processing site) Disposal at common incineration site.
8	Inorganic residue	Process	SCH-I/28.1	75	Collection, Storage, Transportation and sent for co-processing in cement industries or Disposal at common TSDF Site .
9	Spent Catalyst	Process	SCH-I/28.1	6	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
10	Ammonium Chloride	Process (From, 1,2,4-Triazolo[4,3-a]pyridin-3(2H)-one)	SCH-I/28.1	39	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
11	Potassium Bromide	Process (From, 3,4-Dihydro-7-hydroxy-2(1H)-quinolinone)	SCH-I/28.1	96	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
12	Aluminum chloride	Process (From, Ibuprofen)	SCH-I/28.1	84	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
13	Dilute HCl (30%)	Scrubber	SCH- II / B 15	122	Collection, Storage and reuse in plant premises. (Requirement of HCL in Product No. 21 – 596.16 MT/Year)
14	Sodium bi sulphite (30%)	Scrubber	SCH- II / B 15	135	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
15	Sodium Nitrate (25%)	Scrubber	SCH-I/28.1	86	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission
16	Dilute HBr (25-28%)	Scrubber	SCH-I/28.1	78	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission

17	Liq. Ammonia	Scrubber	SCH-I/28.1	5	Collection, Storage and reuse in plant premises. (Requirement of Liq. Ammonia in Product No. 1 – 339.6 MT/Year).
18	Off Specification Products	From mfg. Process (Batch failure)	SCH-I/28.4	5	Collection, Storage, Transportation and sent for co-processing in cement industries (in case of non-operation of co-processing site) Disposal at common incineration site.
R&D					
19	ETP Sludge	ETP	35.3	3.0	Collection, Storage, Transportation & disposal in TSDF.
20	Residue from Distillation/ Organic Process Waste	R&D	28.1	4.0	Collection, Storage, Transportation & send to cement industries for co-processing or incineration in CHWIF.
21	Discarded Drum	Raw Materials/Products	33.1	20	Collection, Storage, Transportation & Sell to GPCB authorized Vendor.
22	Discarded Bags / Liner	Raw Materials/Products	33.1	0.2	Collection, Storage, Transportation & Sell to GPCB authorized Vendor.
23	Off Specification Products	R&D	28.4	1.0	Collection, Storage, Transportation & send for co-processing or incineration in CHWIF.

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Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 400 MTPA.
- ✓ STP sludge generation will be 2 MTPA

Comments:

- ✓ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
- ✓ STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
Methanol	105.26	102.01	96.91	3.09
Ethyl Acetate	15.79	15.30	96.90	3.10
Toluene	26.32	25.42	96.60	3.40
IPA	10.53	10.18	96.71	3.29
THF	40.00	38.71	96.78	3.22
n-Hexane	46.00	44.40	96.52	3.48

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G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- Stand by pumps will be provided on all scrubbers. Besides, scrubbers will be equipped with on-line pH meter with hooter system for better operational control.
- Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
- All the raw materials will be pneumatically transfer to the reactor.
- Emphasis will be given to solvent management/solvent loss prevention.
- Control by having proper scrubbing system.
- Condenser to trap VOC.
- Proper gland packing will be maintained for pumps and valves and to the extent possible pumps with mechanical seal.

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G-3	**LDAR proposed:**

- Company will be installed double mechanical seal and MSW Gaskets in solvent pipelines to prevent leakage from flanges
- Company will be reduced the joints and valves in pipelines.
- All the rotating equipment like pumps will be installed with double Mechanical Seals to arrest any sort of emissions.
- Flanges will be sealed so less losses will be there.

- Down the Temperature of Cooling tower
- Chilled Brine at -10 0C will be used to trap any traces of Solvent which is slipped from Secondary condenser.
- Closed loop system.
- For continue vapor travelling 100mm of Hg (slight vacuum) will be applied on secondary condenser.

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Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

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Storage of Hazardous chemicals in Tanks

Not Applicable

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

- FLP type light fittings will be provided.
- Proper ventilation will be provided in Godown.
- Proper label and identification board /stickers will be provided in the storage area.
- Conductive drum pallets will be provided.
- Drum handling trolley / stackers/fork lift will be used for drum handling.
- Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.
- Ensured that all storage areas have doors with locks.
- Ensured that all containers are properly closed.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	**Safety measures**
FLAMMABLE & EXPLOSIVE	• Separate Isolated Storage Area is constructed as per explosive department requirement and separation distance will be maintained, accordingly. • Workers and Operators handling such materials will be trained for the hazards (fire/explosion, health, and chemical reactivity) associated with them. • Lightening arrestor will be provided on the top of tallest structure. • NFPA label (hazard identification) capacity and content will

		be displayed on respective barrels. • Every time it will be ensured that barrels are cleaned and no chemicals are as a residue to avoid mixing and causing explosion or any mishap • While decanting chemicals proper earthing arrangement will be ensured to avoid static charge • Good housekeeping will be maintained. • Work Instructions shall be prepared and followed. • Proper ventilation will be provided in storage room. • Proper label and identification board /stickers will be provided in the storage area. • Area shall be marked as “Hazardous Chemical Storage”, “No Smoking”, “Hot work Restricted”. No cell phones		
	CORROSIVE & CHEMICALS	• Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. • Corrosive substances should not be allowed to come in contact with materials that may react. • All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. • All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. • Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. • Personal protective devices shall be used • First aid treatment facilities shall be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. • Safety showers and eye washers is provided.		
	TOXIC CHEMICALS	• Ventilation must be sufficient to prevent accumulation of vapor pockets. All fan switches should be outside the storage area. • Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency. • Appropriate minimum safety distances as stipulated in the above mentioned rules have to be maintained from buildings or group of buildings or adjacent property.		
	REACTIVE CHEMICALS	• Store minimum quantities • Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources • Spillage control; bund, spray, blanket, containment. Drain to collection pit • Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles • Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks • Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting		

	• Label (name and number); identify loading/unloading/transfer couplings • Provide appropriate fire protection (sprinkler, dry powder, gas) • Ensure adequate access for both normal and emergency purposes with alternative routes

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals as per storage requirement.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	Safety measures including Automation
Hydrogenation	➢ Installed DCS System ➢ FLP type area will be provided. ➢ Total enclosed process system. ➢ Instrument & Plant Air System. ➢ Nitrogen blanketing in Hydrogenation reactor. ➢ Safety valve and Rupture disc provided on reactor. ➢ Cooling Chilling and power alternative arrangement have been made on reactor. ➢ Hydrogen and Nitrogen Cylinder bank away from the auto clave reactor. ➢ PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. ➢ Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done. ➢ Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level. ➢ Open well ventilated and fragile roofs will be provided to on reactor. ➢ Safe Catalyst charging method will be adopted. ➢ SOP will be prepared and operators will be trained for the same.

	➢ Static earthing and electric earthing (Double) provided. ➢ Reactor vent extended outside the process area and flame arrestor provided on vent line. ➢ Dumping vessel arrangement will be made. ➢ Dumpers for static earthing on pipeline flanges of flammable chemical will be provided.
Bromination	➢ Bromine handling areas will be clearly marked and restricted to qualified, trained personnel only. ➢ Bromine process area will be done with good ventilation ➢ We will maintain bromine vapor concentration in the work area to less than 0.1 ppm with adequate exhaust hoods, ventilation systems and scrubbers. Analyze air for proper control. ➢ Transfer or repackage bromine only in a controlled, closed environment. ➢ Exhaust ventilating systems will be used in enclosed areas where bromine is handled. ➢ Personal Protective Equipments are to be made compulsory when handling Bromine
Chlorination	➢ Chlorine Hood with blower will be provided with scrubbing arrangement. ➢ Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber. ➢ Safety Shower and eye wash will be provided in Chlorine shed area. ➢ Emergency siren will be provided. ➢ First Aid Boxes and Occupational health centre will be made at site. ➢ Chlorine cylinders will be stored in cylinder storage area. ➢ Safety Valve and pressure gauge will be provided on reactor. ➢ All emergency valves and switches and emergency handling facilities will be easily assessable. ➢ All the vessels and equipments will be earthed appropriately and protected against Static Electricity. ➢ Flame proof light fittings will be installed in the plant. ➢ All the Plant Personnel will be provided with PPE ➢ All employees will be given and updated in Safety aspects through periodic training in safety
Ammonia	➢ Valve, pipeline will be checked and maintain, in good condition. ➢ All Gaskets will be checked periodically & if new one replaces found defective. ➢ Joints will be checked regularly to found any Leakage. ➢ ADEQUATE PPE will be kept to handle the Hazard. ➢ ISI Portable fire extinguisher & Hydrant line will be provided as per TAC norms. ➢ Sufficient amount of sand/soil are kept to control any spillage. ➢ Flame proof fitting provided. ➢ Eye washer cum shower will be provided near tank-farm area. ➢ Spark arrester will be installed on all vehicles inside the premises. ➢ SBA set, Canister mask and airline mask will be provided. ➢ Earthing& bonding on tanks will be provided.

	➢ Vent line dipped in water will be provided.
Nitration	➢ The Reactor will have Temperature control system cascaded with cooling water system consisting of Cooling tower, pumps and circulating system. In case of high temperature the steam will get cut off and cooling water will start circulating through the reactor coils. Alternately Chilled water system is also provided for extreme emergencies. ➢ The Reactor will have rupture disc and safety valves which will take care of excess pressure and the outlet of which is connected to the scrubbers. ➢ The Reactor will also have a separate high local vent with pressure relief valve which is connected to a catch pot with water. The catch pot contents will be separated for recycle purpose. This will be additional safety, if 1 & 2 fail at the same time, which is unlikely. ➢ In case of contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately. ➢ In case of contact with skin, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately. ➢ Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Get medical attention. ➢ If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. ➢ Evacuate the victim to a safe area as soon as possible.

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H-3	**Details of Fire Load Calculation**

Total Plot Area:	1150.81 Sq. Meter
Area utilized for plant activity:	300 Sq. Meter
Area utilized for Hazardous Chemicals Storage:	284.38 Sq. Meter
Number of Floors:	G+2 in Production & Admin Bldg.
Water requirement for firefighting in KLD:	2.64 KL/hr
Water storage tank provided for firefighting in KLD:	200 KL
Details of Hydrant Pumps:	One Fire pump, One diesel driven pump and one Jockey pump are being implemented.
Nearest Fire Station :	Panoli GIDC – 0.93 Km
Applicability of Off Site Emergency Plan:	Not Applicable

Comments:

✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

H-4	Details of Fire NOC/Certificate:
Shall be obtained after receipt of EC.	
H-5	**Details of Occupational Health Centre (OHC):**

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Number of permanent Employee:	15
Number of Contractual person/Labour:	10
Area provided for OHC:	15 Sq. Meter provided in Ground Floor at Admin Building
Number of First Aid Boxes:	2 nos
Nearest General Hospital:	Welcare Hospital – 2.31 KM
Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises

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Comments

- ✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

10) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS :

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
3. PP shall carry out proposed project/activities in respect of Active Pharmaceutical Ingredients (API) as per the amended EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (a) R & D products shall be of similar chemistry in line with the EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and the pollution load shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity.
6. Unit shall install CEMS [Continuous Emission Monitoring System] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].
7. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained

9. Safety & Health:

a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals

b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety.
n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench / suppress system for Hydrogenation vessel safety.

WATER

10. Total water requirement for the project shall not exceed 31.1 KLD. Unit shall reuse total 11.9 KLD of boiler condensate, cooling recirculation and treated domestic waste water within premises. Hence, fresh water requirement shall not exceed 19.2 KLD and it shall be met through GIDC only.
11. The industrial effluent generation from the project shall not exceed 16.4 KLD.
12. Industrial effluent shall be treated as below.

- 15.2 KLD, effluent from process, utility, washing, R&D and other scrubber shall be treated into primary ETP and then treated effluent shall be sent to CMEE of M/s BEIL through GPS fitted tanker for final treatment and disposal.
- 1.2 KLD, Scrubber exhausting media shall be sold to end users having rule-9 permission or reused back in process as per Hazardous Waste Rules' 2016.
- Treated waste water shall be sent to authorized Common MEE facility only after complying

with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

13. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during any shut down of CMEE.
14. Domestic wastewater generation shall not exceed 1.5 KL/day for proposed project and it shall be treated in STP. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
15. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
16. Unit shall provide STP and ETP with adequate capacity.
17. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

AIR:

18. Unit shall not exceed fuel consumption for Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
19. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
20. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
21. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
22. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
23. For control of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
24. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of

toxic solvents shall be minimum. All venting equipment shall have vapour recovery system

- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

25. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx, HCl, Br2,, and NH3 shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

26. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
27. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
28. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
29. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
30. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
31. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

32. The PP shall develop green belt [291 m2 (25.28%) inside plant premises + 169 m2 (14.68%) at Common Plot in Panoli GIDC = Total: 460 Sq. m.) i.e. 40 % of total plot area] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

33. The project proponent shall carry out the entire activities [Funds towards Renewable energy, water harvesting activity & Drinking water facility (Solar street lights, Construct RCC collection tank with filtration facility for rain water harvesting, Provide R.O. Plant with drinking water storage tank)] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
34. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

35. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
36. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
37. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
38. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
39. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
40. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
41. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

2.	SIA/GJ/IND2/223588/2021	**M/s. SRM Life Science Pvt. Ltd.** Plot No. 524, GIDC Estate, Panoli -394116, Tal.: Ankleshwar, Dist.: Bharuch, State: Gujarat.	Appraisal

Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.10. Type of application:	EC-Expansion
1.11. Proposal no.	SIA/GJ/IND2/223588/2021
1.12. Category of Project :	5 (f) – B2
1.13. Date of application :	12-10-2021
1.14. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.15. TOR No. & Date :	Not applicable as project is categorized as B2
1.16. Technical expert / Environmental Consultant :	M/s Envycraft Environmental Services
1.17. SEAC Meeting No. and Date:	315th meeting dated 29.11.2021
1.18. Compliance of Existing EC & CCA	EC Compliance Report is Submitted. Unit is having CTE Only.

2) This is an Expansion project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

S. N.	**Name of the Products**	**API OR INTERMEDIATE**	**CAS no.**	**Quantity MT/Month**			**End-use of the products ***
				Existing	**Proposed**	**Total**	
EXISTING							
1.	Lansoprazole	**API**	103577-45-3	**27**	**-27**	**NIL**	Fact sheet For patient And parent Caregivers Emergency Use Authorization Of Chloroquine Phosphate for Treatment of COVID 19. Most common Side effects Of Chloroquine Reported are, stomach Pain, nausea, vomiting, GERD.
2.	Omeprazole	**API**	73590-58-6				
3.	Rabeprezole	**API**	117976-89-3				

4.	Pantprazole	**API**	102625-70-7				To treat such side common side effect PROTON PUMP INHIBITORS (omeprazole, pantoprazole, Rabeprazole etc) H2 ANTAGONIST (ranitidine, famotidine, etc) Are used as adjuvant to prevent side effect
5.	Aripiprazole	**API**	129722-12-9	**3**	**-3**	**NIL**	
6.	Choline Fenofibrate	**API**	49562-28-9				Choline Fenofibric acid is used along with a proper diet to help lower "bad" cholesterol and fats (such as LDL, triglycerides) and raise "good" cholesterol (HDL) in the blood.
Proposed							
1.	2-Butyl-4-Chloro-1h-Imidazole-5-Carbaldehyde (BCFI)	Interme diate	83857-96-9	**--**	**90**	**90**	**Losartan/**to treat hypertension (high blood pressure)
2.	2-Ethoxybenzoic Acid	Interme diate	134-11-2				**Levosulpiride** /symptoms of schizophrenia, anxiety disorders, and dysthymia
3.	6-Chlorohexan-1-Ol	Interme diate	2009-83-8				**Pentoxifylline/** improves the flow of blood through blood vessels.
4.	3,4-Dimethoxybenzoic Acid (Veratric Acid)	Interme diate	93-07-2				**Mebeverine hydrochloride /** antispasmodic
5.	(2,3,4,5-Bis-O-(1-Methylidine)B-D-Fructopyranose	Interme diate	20880-92-6				**Topiramate** /Control seizures (epilepsy)
6.	4-Methoxy-2-Nitroaniline	Interme diate	96-96-8				**Omeprazole/** to treat and prevent the return of ulcers caused by a certain type of bacteria
7.	3,5-Dimethyl-4-Nitropyridine -1-Oxide (Omeprazole Nitro)	Interme diate	14248-66-9				**Omeprazole/** to treat and prevent the return of ulcers caused by a certain type of bacteria
8.	Dimethyl Amino Ethyl Chloride Hydrochloride	Interme diate	4584-46-7				**Itraconazole**/ treat fungal infections
9.	Diethyl Amino Ethyl Chloride	Interme diate	869-24-9				**Itraconazole**/ treat fungal infections

	Hydrochloride						
10	Bis-(2-Chloroethylamine) Hydrochloride	Intermediate	821-48-7				**Trazodone/** to treat depression and post-traumatic stress
11	Mannich Hydrochloride	Intermediate	42036-65-7				**Tramadol/** used to treat moderate to severe pain.
12	1-(3-Chlorophenyl)-4-(3-Chloropropyl) Piperazine Hcl	Intermediate	52605-52-4				**Trazodone/** to treat depression and post-traumatic stress
13	[1,2,4]-Triazalo[4,3-A]Pyridine-3-(2h)-One Sodium Salt	Intermediate	50594-92-8				**Trazodone/** to treat depression and post-traumatic stress
14	4-(Difluoromethoxy)-2-Nitroaniline	Intermediate	887412-09-1				**Pantoprazole/** used to allow the esophagus to heal and prevent further damage to the esophagus in adults with **GERD**
15	Tris-(4-Amino Phenylthio) Phosphate	Intermediate	52664-35-4				**Amino RF/**to give nutrition to the body (Food Supplementary Injection)
16	2-Chloro-5-Nitro Benzoic Acid (CNBA)	Intermediate	2516-96-3				**Mesalamine/** to treat a certain bowel disease
17	N-Acetyl Glycine (NAGL)	Intermediate	543-24-8				**Diminazene Aceturate /** to treat trypanosomiasis
R&D*				**-**	**0.1**	**0.1**	
TOTAL (Proposed)				**30.0 MT/Month**	**60.0 MT/Month**	**90.0 MT/Month**	

3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
4) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
6) Committee noted the following :
   - ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
   - ✓ PP has obtained CTE only.
   - ✓ PP submitted EC self-compliance report & compliance report found satisfactory.
   - ✓ PP submitted that there is no legal court case and public complaint against unit.

- ✓ Existing products will be discontinued.
- ✓ Waste water will be sent to CMEE of M/s. Detox India Pvt. Ltd., Ankleshwar. Membership certificate is obtained for the same.

7) PP submitted
   - ✓ Justification of production capacity for Existing & Proposed Products.
   - ✓ Revised CER activities.

8) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020

9) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A-1</td><td>Total cost of Proposed Project
(Rs. in Crores):

<table>
<tr><th>Existing</th><th>Proposed</th><th>Total</th></tr>
<tr><td>Rs. 0.14 Crores</td><td>Rs. 2.86 Crores</td><td>Rs. 3.00 Crores</td></tr>
</table>

Break-up of proposed project Cost:

<table>
<tr><th>Details</th><th>Project Cost
(Rs. In Crores)</th></tr>
<tr><td>Land</td><td>Rs. 0.14 Crores</td></tr>
<tr><td>Building</td><td>Rs. 0.78 Crores</td></tr>
<tr><td>Machinery</td><td>Rs. 0.97 Crores</td></tr>
<tr><td>Env. & Safety</td><td>Rs. 0.49 Crores</td></tr>
<tr><td>Miscellaneous</td><td>Rs. 0.62 Crores</td></tr>
<tr><td>Total</td><td>Rs. 3.00 Crores</td></tr>
</table>
-</td><td></td></tr>
<tr><td>A-2</td><td>Details of Environmental Management Plan (EMP)</td><td>As below:</td></tr>
<tr><td colspan="3">-
<table>
<tr><th>Sr. No</th><th>Unit</th><th>Detail</th><th>Capital Cost (Rs. In Lakhs)</th><th>Operating Cost (Rs. In Lakhs)</th><th>Maintenance Cost (Rs. In Lakhs)</th><th>Total Recurring Cost (Rs. In Lakhs)</th></tr>
<tr><td rowspan="2">1.</td><td rowspan="2">Waste Water</td><td>Primary ETP</td><td>31.5</td><td>5.1</td><td>0.51</td><td>5.61</td></tr>
<tr><td>Common MEE Membership</td><td>1.00</td><td>51.0</td><td>-</td><td>51.00</td></tr>
<tr><td>2.</td><td>Air & LDAR</td><td>4 No. Scrubber, 1 No. MCS, 1 No. Bag Filter</td><td>20.4</td><td>0.51</td><td>0.26</td><td>0.77</td></tr>
<tr><td>3.</td><td>Hazardous Manageme</td><td>Membership & Disposal +</td><td>1.00</td><td>4.3</td><td>-</td><td>4.3</td></tr>
</table></td></tr>
</table>

	nt	Incineration				
		Transportation	-	0.08	-	0.08
4.	Fire & Safety	Fire Hydrant & pipeline System	13.00	0.13	0.06	0.19
		Safety equipment/ PPES	6.50	0.05	0.03	0.08
		Fire Extinguisher & Foam Trolley	2.50	0.02	0.01	0.03
		Integrated DCS	20.00	1.00	0.02	1.02
		Flame proof electric fitting	5.00	0.25	0.05	0.3
5.	AWH Monitoring	In House Monitoring	2.00	0.10	-	0.1
6.	Green Belt Developme nt	Tree Plantation	0.55	0.06	0.03	0.09
7.	Occupation al Health	OHC, Training & Medical Checkup	2.00	0.20	0.10	0.3
8.	Noise Control	Acoustic enclosure & Silencer & Vibration pads & Noise PPEs	2.00	0.03	0.02	0.05
9.	CER Funds	1 % as per OM dated 01/05/2018	6.0	0.06	0.04	0.1
Total			**113.45~ 113.5**			**64.02**

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3 | **Details of CER** -

PP shall carry out CER activities as below:

Activities (On basis of Needs Assessment)	**Budget**		
	1st Year	**2nd Year**	**TOTAL**
Rain water Recharge- • Rain water recharge system (1.75 Lakhs) (Percolated bore well) **Village: Bakrol, & Bhadi**	**1.75**	**1.75**	**3.5**
Solar panel • Installation of solar panel (5 KW – 2.5 lakh X1 Nos.) **Village- Kharod**	**2.5**	**-**	**2.5**

	Total Cost	**Approx. INR 6.0 Lakh**

B	**Land / Plot ownership details:** Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/4576 Dated: 15/05/2012.
B-1	**Plot area** **Existing** | **Proposed** | **Total** 1376 Sq. m. | -- | 1376 Sq. m. -
B-2	**Area adequacy** ➢ Production capacity: 90 MT/Month (after Expansion). ➢ Company will provide 104.0 m^2(G+1) for storage hazardous waste ➢ Area required for ETP 32 m^2. ➢ Separate area 32 m^2 will be provided for the Boiler & Utility. ➢ Company has provided 16 m^2 for storage fly ash & fuel storage area (fly ash will be collect, stored in hazardous area).

Area Adequacy table:

Sr. No	Particulars	Criteria for Storage	Inventory Required (MT)(KL)	Area Required m2	Area Proposed m2
1	Finished product storage area (1 week inventory)	Drum/Bags: 100 Nos. 0.5 MT/ 1m^2	23.0	50.0	60.0
2	Raw Material Store area (1 week inventory) (G+2)	(450 Nos. Drum/Bags) 0.5 MT/ 1m^2	90.0	225.0	312.0
3	Drum Storage Area	50 Drums (0.5 MT/ 1m^2)	10.0	25.0	48.0
4	Non-PESO Storage Area	Tanks 5 KL x 2	10.0	15.0	24.0
5	Cylinder Storage Area (HCl gas)	HCl gas	0.128	7.0	15.0
6	Hazardous Waste Storage Area (G+1) (90 Day Inventory)	-	198 & 45 (Fly Ash)	121.5	208.0
	Total		**376.128 MT**	**443.5 m2**	**667.0 m2**

Note: Above storage area calculation has been done considering worst case of production.

Company will store its raw material in Drums & Tanks (P**rocure Raw Materials from the local market. 90% of these raw materials are easily available from this market. Hence, no excess quantity of raw materials will be stored**).

Based on area proposed (column no 6) against area required (column

	no 5) is much higher. Hence, it is envisaged that area is adequate. ➢ **Hence, adequate area is available for Expansion Facility.** **Comments:** **SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.**
B-3	**Green belt area** Total (Sq. meter): Area in Sq. meter: 455.00= 275 m^2 Within premises+ 180 m^2 in GIDC; % of total area: 20% Inside + 13% in GIDC Area **Comments:** The condition shall be given that - 1. The PP shall develop green **belt [275 m2 (20%) inside plant premises + 180 m2 (13 %)** at Common Plot in Panoli GIDC**= Total: 455.00 Sq. m.) i.e. 33 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.
C	**Employment generation** **Existing**: *Nil; **Proposed**: +50 (Direct= 30 Employees Indirect: 20 Employees); **Total**: 50 (Direct= 30 Employees Indirect: 20 Employees) *Project is not executed yet.
D	**WATER**
D-1	**Source of Water Supply** ➢ Panoli GIDC Water supply Authority.(Permission obtained vide letter: NAO/PNK/2866 Dated: 26/11/2021) **Comments:** ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	Existing	Water consumption (Proposed) KLD			Remarks
		Total	Reuse	Fresh	
(A) Domestic	-3.5	2.5	-	2.5	
(B) Gardening	-2.0	2.0	-	2.0	
(C) Industrial					
Process	-16.23	17.0	-	17.0	**WC: 4-methoxy-2-nitroaniline**
Washing	-2.0	2.0		2.0	
Boiler	-4.0	24.0	19.0	5.0	Total Water: 24 KLD Boiler Condensate Recovery:19 KLD Hence, make up water: 5 KLD
Cooling	-10.0	10.0	--	10.0	
Scrubbing	--	3.0	1.5	1.5	Boiler Blowdown & Cooling Blowdown reused in Scrubber
Other	-1.0	--	--	--	
Industrial Total	**-33.23**	**56.0**	**20.5**	**35.5**	
Grand Total (A+B+C)	**-38.73**	**60.5**	**20.5**	**40.0**	

-

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

Category	Existing KLD	Waste water generation (Proposed) KLD	Remarks
(A) Domestic	-2.9	2.0	Treated in ETP
(B) Industrial			
Process	-30.0	30.0	**WC: 3,5-Dimethyl-4-Nitropyridine -1-oxide (Omeprazole Nitro)**
Boiler	-0.4	0.5	Reused in Scrubber
Cooling	-0.1	1.0	
Washing	-2.0	2.0	Treated in ETP

Scrubbing Solution (18-20% Na2SO3)	--	1.0	To End User
Scrubbing Solution (25-30% NaCl)	--	1.0	Treated in ETP
Scrubbing Solution (10-15% $NaNO_2$)	--	1.0	Treated in ETP
Other	-1.0	--	
Total Industrial waste water	**-33.5**	**36.5**	
Total (A+B)	**-36.4**	**38.5**	

-

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4 Break-up of waste water disposal & facility (For Domestic)

Sr. no.	Quantity KLD	Facility
1	2.0 KLD	Treated into ETP (Primary) & subject to Common Evaporation facility.

2.0 KLD Domestic wastewater will be subjected to Primary ETP & sent to Common Evaporation Facility of M/s. Detox India Pvt. Ltd., Ankleshwar.

Comments:

- ➢ Domestic wastewater generation shall not exceed 2.0 KL/day for expansion project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

D-5 **Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	Quantity KLD	Facility
1	33.5 KLD	Treated into ETP(Primary) & subject to Common Evaporation facility.
2	1.5 KLD	Reuse in Scrubber
3	1.0 KLD	End user
4	0.5 KLD	ETP Sludge
Total	**36.5 KLD**	Industrial Effluent

Note:33.5 KLD industrial effluent and 2.0 KLD Domestic waste water will be treated into ETP(Primary), Finally **35.5 KLD** treated effluent sent to Common Evaporation Facility of M/s. Detox India Pvt. Ltd., Ankleshwar.

Comments:

1. Management of waste water shall be as under:
   - Industrial effluent generate from process shall be 30.0 KLD, blowdown from cooling & boiler 1.5 KLD shall be recycle in scrubbing section after neutralization, effluent from washing 2.0 KLD, Scrubbing solutions 2 KLD (25-30% NaCl @ 1.0 KLD & 10-15% $NaNO_2$ @ 1.0 KLD) & domestic section 2.0 KLD shall be treated in Primary ETP and subjected to Common Evaporation Facility of M/s. Detox India Pvt. Ltd., Ankleshwar.. Scrubbing solutions 1.0 KLD (18-20% Na_2SO_3) shall be sent to end users.
   - Treated waste water shall be sent to authorized Common MEE facility only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
2. Unit shall provide ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement : 350 KVA
E-2	**Flue gas emission details**

Existing

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler (1.0 TPH)	11	Natural Gas	3000 SCM/Day	PM SO_2 NO_x	Adequate Stack Height

Total proposed (After expansion)

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e., Air Pollutants	Air Pollution Control Measures (APCM)
1.	Boiler (1.0 TPH)	30	Natural Gas OR Bio Coal	3000 SCM/Day OR 5 MT/Day	PM SO_2 NO_x	MCS + Bag Filter & water scrubber & Adequate Stack height
2.	DG Set (320 KVA) Stand By	11	Diesel	65 Liter		Adequate Stack height

E-3	**Process gas**

Existing:

There is no process gas emission.

Total Proposed (After Expansion):

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Reaction Vessel	SO2 HCl	18/0.2	Two Stage Alkali Scrubber
2	Reaction Vessel	NOX	18/0.2	Two Stage Alkali Scrubber

-

E-4	**Fugitive emission** details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

-

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rule	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	

			S.				
1.	ETP Sludge	ETP	35.3/ SCH -I	144	-144	185.0	185.0	Collection, Storage, Transportation, disposal at nearest TSDF site.
2.	Process Waste (Inorganic)	Mfg. Process	8.1/SCH-I	--		607.0	607.0*	
3.	Used oil / spent oil	DG & Other Utilities	5.1/SCH-I	0.015	-0.015	0.015	0.015	Collection, Storage, Transportation & Reuse as lubricant or sale to authorized re-refiners.
4.	Discarded Containers/ Empty drums	Raw Material Supplier	33.3/ SCH -I	60	-60	90 (Nos. 1200 Container) (Nos. 15000 Bags/Liners)	90 (Nos. 1200 Container) (Nos. 15000 Bags/Liners)	Collection, Storage, Transportation; Decontamination and Reuse or Sale to Authorized Vendor
5.	Spent Carbon	Purification Process	28.3/ SCH -I	16.44	-16.44	55.0	55.0	Collection, Storage, Transportation & send to pre/co processing unit (Cement Industries) OR send to CHWIF.
6.	Process Waste (Organic)	Mfg. Process	28.1/ SCH -I	--		365.0	365.0*	
7.	Distillation Residue	Distillation Process	20.3/ SCH -I	72.8	-72.8	99.0	99.0	
8.	Spent Solvent	Distillation Assembly	28.6/ SCH -I	3898.8	-3898.8	3330.0	3330.0*	Collection, Storage, Handling & Subjected to distillation assembly to recover the solvent & Reuse within premise.
9.	Scrubbing Solution 18-20% Na_2SO_3	From Scrubber (Sulfonation)	28.1/ SCH -I	--		365.0	365.0	Collection, Storage, Transportation & Sell to End Users having

10.	Hepta Hydrate Sodium Acetate	Mfg. Process	28.1/ SCH -I	--	705.0	705.0	permission under Rule-9.
11.	Ammonium Sulfate	Mfg. Process	28.1/ SCH -I	--	1510.0	1510.0	
12.	Scrubbing Solution 25-30% NaCl	From Scrubber (Chlorination)	28.1/ SCH -I	--	365.0	365.0	Collection, Storage & treated in ETP.
13.	Scrubbing Solution 10-15% $NaNO_2$	From Scrubber (Nitration)	28.1/ SCH -I	--	365.0	365.0	

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 180 MTPA.

Comments:

- ✓ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

Sr. No.	Product Name	Solvent	Qty. Used MT/MT	Qty. Recovered MT/MT	Distillation Residue	Total Losses/ Fresh	Solvent Recovery

							%
1	2-butyl-4-chloro-1H-imidazole-5-carbaldehyde	Methanol	1.58	1.51	0.07395	0.09765	96
		Toluene	1.61	1.53	0.084025	0.108175	95

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement.
- The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

G-3	**LDAR proposed:**

Following steps shall be followed for effective implementation of LDAR Program:

1. Process Controls
2. Emissions control program
3. Selection of appropriate method for leak detection
4. Scheduling and checklist for Leak Detection
5. Methods for rectification of identified leaks
6. Frequency of Monitoring
7. Record keeping of LDAR Program

Leakage/ Component	**Source of equipment leak**	**Detection Method**
Valves	Flange leakage	Visual Check
Pump	From pump seal	Visual Check
Open vents from the tank top	Overflow of tank	High level alarm
High pressure leak	-	Audible Method

Connectors	Gasket failure and improperly torqued bolts on flanges.	For welded flanges place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. If the source is rotating shaft, position the probe within 1 cm of the shaft seal interface for the survey.
Open ended line	At the point of line Incorrect implementation of block and bleed procedure	Place the probe inlet at approximately the entry of the opening to the atmosphere.

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

S.N.	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
Non-PESO – 2 No.				
1	Sulfuric Acid	5 KL	1 Nos.	Toxic
2	Nitric Acid	5 KL	1 Nos.	Toxic

Storage of Hazardous chemicals in Tanks

- Non-PESO- 2 Nos
- **Safety measures for Acid storage Tank:**
  - ✓ Storage tank will be stored away from the process plant.
  - ✓ Tanker unloading procedure will be prepared and implemented.
  - ✓ Caution note and emergency handling procedure will be displayed at unloading area and trained all operators.
  - ✓ NFPA label will be provided.
  - ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator.
  - ✓ Neutralizing agent will be kept ready for tackle any emergency spillage.
  - ✓ Safety shower, eye wash with quenching unit will be provided in acid storage area.
  - ✓ Material will be handled in close condition in pipe line.
  - ✓ Dyke wall will be provided to all storage tanks, collection pit with valve provision.
  - ✓ Double drain valve will provided.
  - ✓ Level gauge will be provided on all storage tanks.
  - ✓ Safety permit for loading unloading of hazardous material will be prepared

and implemented. TREM CARD will be provided to all transporters and will be trained for transportation Emergency of Hazardous chemicals.

- ✓ Fire hydrant system with jockey pump as per TAC norms will be installed.

- **Safety Measures of Non-PESO Tank**
  - ✓ Leakage / spillage mitigation plan
  - ✓ Tank shall be rubber lined to prevent the corrosion
  - ✓ Dyke wall shall be provided for containment
  - ✓ Rubber type hand gloves and chemical splash goggles and full-face cartridge type mask and PVC apron shall be used while manual handling
  - ✓ Lime shall be readily available during leak to neutralize the spill material
  - ✓ Safety shower, eye wash with quenching unit will be provided in acid storage area.
  - ✓ Material will be handled in close condition in pipe line.
  - ✓ Double drain valve will provided.
  - ✓ Level gauge will be provided on all storage tanks.
  - ✓ Fire hydrant system with jockey pump as per TAC norms will be installed

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Drum Safety measure:

- Some chemicals will be received at plant in drums by road truck and stored in a separate drum storage area.
- FLP type light fittings will be provided.
- Proper ventilation will be provided in go down.
- Proper label and identification board /stickers will be provided in the storage area.
- Conductive drum pallets will be provided.
- Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE (N-Butanol, Toluene, Methanol, Acetonitrile, Hexane, Triethylamine, Ethanol, Acetone, IPA, Ethyl acetate)	➢ Separate Isolated Storage Area is constructed as per explosive department requirement and separation distance will be maintained, accordingly. ➢ Store/groups of chemicals as per Incompatibility. ➢ Workers and Operators handling such materials will be trained for the hazards (fire/explosion, health, and chemical reactivity) associated with them. ➢ Lightening arrestor will be provided on the top of tallest structure. ➢ NFPA label (hazard identification) capacity and content will be displayed on respective barrels. ➢ Every time it will be ensured that barrels are cleaned and no chemicals are as a residue to avoid mixing and causing explosion or any mishap ➢ While decanting chemicals proper earthing arrangement will be ensured to avoid static charge

		➢ Good housekeeping will be maintained. ➢ Work Instructions shall be prepared and followed. ➢ Proper ventilation will be provided in storage room. ➢ Proper label and identification board /stickers will be provided in the storage area. ➢ Area shall be marked as “Hazardous Chemical Storage”, “No Smoking”, “Hot work Restricted”. No cell phones ➢ MSDS of chemicals stored will be available in storage area ➢ Static earthing provision will be made for storage area. ➢ Fire load calculation will be done and as per fire load hydrant system will be provided as per NFPA std. and fire extinguishers will be provided as per fire load calculation. ➢ Flame proof type construction, equipment and lighting will be provided. ➢ Electrical wiring and equipment shall be installed in accordance with the National Electric Code (NEC). In areas where flammables are stored, electrical equipment and wiring shall be approved for Class I, Division 1, hazardous locations. ➢ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask, SCABA, Airline Respiratory system, Fire suit etc. will be provided to operator. ➢ Smoking should never be allowed near flammable material storage areas. ➢ Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "FLAMMABLE".		
	CORROSIVE CHEMICALS (Hydrogen Peroxide, Sulphuric Acid, Sodium Hydroxide)	➢ Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. ➢ Corrosive substances should not be allowed to come in contact with materials that may react. ➢ All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. ➢ All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. ➢ Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. ➢ Personal protective devices shall be used ➢ First aid treatment facilities shall be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. ➢ Safety showers and eye washers is provided. ➢ Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "CORROSIVE".		

TOXIC CHEMICALS (Phosphorous oxychloride, Aluminium chloride, Liq. Ammonia)	➢ Ventilation must be sufficient to prevent accumulation of vapor pockets. All fan switches should be outside the storage area. ➢ Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency. ➢ Appropriate minimum safety distances as stipulated in the above-mentioned rules have to be maintained from buildings or group of buildings or adjacent property. ➢ Neutralizing agent will be kept ready for tackle any emergency spillage. ➢ Fire hydrant system with jockey pump as per TAC norms will be installed. ➢ Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "TOXIC".
REACTIVE CHEMICALS (Nitric Acid, Thionyl Chloride)	➢ Store minimum quantities ➢ Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources ➢ Spillage control; bund, spray, blanket, containment. Drain to collection pit ➢ Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area ➢ Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. ➢ Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles ➢ Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks ➢ Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting ➢ Label (name and number); identify loading/unloading/transfer couplings. ➢ Provide appropriate fire protection (sprinkler, dry powder, gas) ➢ Ensure adequate access for both normal and emergency purposes with alternative routes

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	**Safety measures including Automation- Provision of integrated DCS shall be made**
Sulphonation & Chlorination (Only Through Thionyl Chloride)	➢ Provisions of safety valve & rupture disk on reactor. ➢ Provisions of auto dumping Vessel. ➢ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator. ➢ **To avoid runaway reaction, TC charging will be done gradually & slowly.** ➢ **Charging will be done only through closed line and system. Scrubber attached with closed system.** ➢ **Make sure the absorber unit (two stage Alkali scrubber) is working and capable of handling vented SO2 / HCl fumes.** ➢ **Neutralizing agent will be kept ready for tackle any emergency spillage.** ➢ Safety Shower and eye wash will be provided near process area. ➢ For Thionyl Chloride evacuate area in down wind direction up to 0.3 km (300 meter) in small spillage. ➢ Emergency siren and wind sock will be provided. ➢ Tele Communication system and mobile phone will be used in case of emergency situations for communication. ➢ Total close process will be adopted for Thionyl chloride charging. ➢ Caution note and emergency first aid will be displayed and train for the same to all employees. ➢ First Aid Boxes will be available in process area. ➢ Emergency organization and team will be prepared as per On site-Off site emergency planning. ➢ Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, communication and general administration team, Medical team etc. ➢ Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. ➢ Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. Keep combustibles (wood, paper, oil, etc.) away from spilled material. ➢ Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

Nitration	➢ SOP will be displayed for safe charging of Nitric acid for nitration process ➢ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator at time of nitric acid charging. ➢ Make sure the absorber unit (two stage Alkali scrubber) will be working and capable of handling vented NO2 fumes. ➢ Neutralizing agent will be kept ready for tackle any emergency spillage. ➢ Safety Shower and eye wash will be provided near process area. ➢ Total close process will be adopted (from storage tank to measured vessel & then to reactor) for Nitric Acid charging. ➢ Caution note and emergency first aid will be displayed for the same to all employees. ➢ First Aid Boxes will be available in process area. ➢ Prevention measures for runaway reaction of nitration reaction. ➢ Instrumentation control –Interlock, Rotameter, DCS, Level alarms ➢ TIC –Temp Indicator Controller- of jacketed reactor (Gradually Charging material to maintain rate of rise of temperature, - Temperature sensor – Chilling Plant, Temp Range of Reaction: 25 to 30 degree centigrade Pressure : Atmospheric) ➢ Emergency control measures: ➢ Provision of Dumping vessel of the contents of the nitrator underneath reactor; the contents will be neutralized (by Alkali) in catch point. It will be sent to CF (Co-Processing/CHWIF/TSDF).

H-3 Details of Fire Load Calculation

Total Plot Area:	1376 Sq.mt
Area utilized for plant activity:	143.0 Sq. m.(G+2)
Area utilized for Hazardous Chemicals Storage:	48.0 Sq. m.
Number of Floors:	G+2
Water requirement for firefighting in KLD:	14165 Lit.
Water storage tank provided for firefighting in KLD:	1,00,000 liters (Approx. 7 times more than requirement)
Details of Hydrant Pumps:	Fire water Pump will be available. We will have 01 No's of electrical fire water Pump located at pump house having capacity 4550.0 litres/min and 01 No's of Diesel pump having capacity 4550.0 litres/min. Apart from this we have 01 Nos Jockey Pumps of capacity 1080.0 litres/min which maintains the Fire water Header Pressure at 8.0 kg/cm^2.
Nearest Fire Station :	Fire Station (GIDC Panoli Fire station)
Applicability of Off Site Emergency Plan:	--

Comments:

	✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 100 KL SEAC found it as per the requirement.
H-4	**Details of Fire NOC/Certificate:**
Shall be obtained after receipt of EC.	
H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	30
Number of Contractual person/Labour:	20
Area provided for OHC:	16 m^2
Number of First Aid Boxes:	15
Nearest General Hospital:	Welcare Hospital, Panoli Road, Khrarod
Name of Antidotes to be store in plant:	Artificial respiration, First Aid Box, Oxygen, Ethanol, Novasine Eye Drops etc.

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Comments

✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

10) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after

the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.

3. PP shall carry out proposed project/activities in respect of Active Pharmaceutical Ingredients (API) as per the amended EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (a) R & D products shall be of similar chemistry in line with the EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and the pollution load shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity.
6. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
7. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.

9. <u>Safety & Health:</u>

a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.
b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

m) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety

n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

10. Total water requirement for the project shall not exceed 60.5 KLD. Unit shall reuse 20.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 40.0 KLD and it shall be met through GIDC only.
11. The industrial effluent generation from the project shall not exceed 36.5 KLD.
12. Management of waste water shall be as under:
    - Industrial effluent generated from process shall be 30.0 KLD, blowdown from cooling & boiler 1.5 KLD shall be recycled in scrubbing section after neutralization, effluent from washing 2.0 KLD, Scrubbing solutions 2 KLD (25-30% NaCl @ 1.0 KLD & 10-15% $NaNO_2$ @ 1.0 KLD) & domestic section 2.0 KLD shall be treated in Primary ETP and subjected to Common Evaporation Facility of M/s. Detox India Pvt. Ltd., Ankleshwar. Scrubbing solutions 1.0 KLD (18-20% Na_2SO_3) shall be sent to end users.
    - Treated waste water shall be sent to authorized Common MEE facility only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during any shut down of Common MEE.
14. Domestic wastewater generation shall not exceed 2 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
15. Unit shall provide ETP with adequate capacity.

16. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
17. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
18. Proper logbooks of ETP reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

19. Unit shall not exceed fuel consumption for Boiler and D G Set as per the point no. E-2 as mentioned above.
20. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
22. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
23. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
24. For control of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
25. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.

- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

26. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

27. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
28. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
29. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
30. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
31. ETP sludge shall be collected and send to TSDF site for landfilling.
32. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

33. The PP shall develop green belt [275 m2 (20%) inside plant premises + 180 m2 (13%) at Common Plot in Panoli GIDC= Total: 455 Sq. m.) i.e. 33 % of total plot area] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

34. The project proponent shall carry out the entire activities [Rain Water Recharge & Solar panels installation at Village] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly

compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

35. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

36. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
37. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
38. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
39. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
40. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
41. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
42. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

3.	SIA/GJ/IND2/226838/2021	**M/s. S-Tech Life Science** Plot No. 4707-A/13, G.I.D.C. Industrial Estate, Ankleshwar, Tal: Ankleshwar, Dist: Bharuch – 393 002, Gujarat.	Appraisal

Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.19. Type of application:	EC-NEW
1.20. Proposal no.	SIA/GJ/IND2/226838/2021
1.21. Category of Project :	5 (f) – B2
1.22. Date of application :	12.10.2021
1.23. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.24. TOR No. & Date :	Not applicable as project is categorized as B2
1.25. Technical expert / Environmental Consultant :	M/s. EcoNext Enviro Technologies
1.26. SEAC Meeting No. and Date:	315th meeting dated 29.11.2021
1.27. Compliance of Existing EC & CCA	Not Applicable

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

S.N	Name of product	CAS No.	Quantity MT/month	End Use
1.	Lamotrigine & its intermediates	84057-84-1	40	To treat epilepsy
1.1	2-(2,3-Dichlorophenyl)-2- phenyl methylene hydrazine carboximidamidine	84689-20-3		
1.2	2-(2,3-Dichlorophenyl)-oxo-acetonitrile	77668-42-9		
2.	Monobenzone USP	103-16-2		To permanently lighten skin in people with vitiligo
3.	Levetricetam & its intermediates	102767-28-2		Anticonvulsants
3.1	Levetricetam crude	102767-28-2		
3.2	(S)-2-Aminobutanamide Hydrochloride	7682-20-4		
4.	Fexofenadine Hydrochloride	153439-40-8		Antihistamines
4.1	Fexofenadine	83799-24-0		
4.2	2-[4-[4-[4-(Hydroxydiphenylmethyl)-1-piperidinyl]-1- oxobutyl]phenyl]-2,2-dimethyl acetic acid methyl ester	154477-55-1		
4.3	Methyl 2-(4-(4-chlorobutanoyl)phenyl)-2- methyl propanoate	154477-54-0		

4.4	alpha,alpha-Diphenyl-4-piperidino methanol	115-46-8			
5.	Pidotimod & its intermediates	121808-62-6		Immuno-stimulant	
5.1	D-Pyroglutamic acid	4042-36-8			
5.2	Ethyl L-thiazolidine-4-carboxylate hydrochloride	86028-91-3			
6.	Tamsulosine HCl	106133-20-4		Alpha-blockers	
7.	Febuxostat & its intermediate	144060-53-7		To treat hyperuricemia	
7.1	2-(3-cyano-4-isobutoxyphenyl)-4-methyl-5-thiazolecarboxylic acid	160844-75-7			
8.	Clopidogrel Bisulfate & its intermediates	120202-66-6		Anti-platelet	
8.1	Methyl-alpha-(2-thienylethylamino)-2-chlorophenyl acetate	141109-26-4			
8.2	Methyl-alpha-amino-2-chlorophenyl acetate tartaric acid	1233361-76-6			
9.	Sitagliptin Phosphate & its intermediates	654671-78-0		Anti-diabetic	
9.1	(3R)-N-(tert-Butoxy carbonyl)-3-amino-4-(2,4,5- trifluorophenyl) butanoic acid	486460-00-8			
9.2	3-(trifluoromethyl)-5,6, 7,8-tetrahydro- [1,2,4] triazolo[4,3-a]pyrazine	486460-21-3			
9.3	3-trifluoro methyl-[1,2,4] triazole[4,3- a]piperazine hydrochloride	762240-92-6			
9.4	1-(3-(trifluoromethyl)-5,6-dihydro-[1,2,4] triazolo[4,3-a]pyrazin-7(8H)-yl)-4-(2,4,5- trifluorophenyl)butane-1,3-dione /(2Z)-4-Oxo-4- [3-(trifluoromethyl)-5,6-dihydro-[1,2,4]triazolo [4,3-a]pyrazine-7(8H)-yl]-1-(2,4,5- trifluorophenyl) butan-2-one	764667-65-4			
10.	Montelukast Sodium & its intermediates	151767-02-1		To prevent wheezing, difficulty breathing, chest tightness, and coughing caused by asthma	
10.1	Dicyclohexylamine (R,E)-2-(1-(((1-(3-(2-(7-chloroquinolin-2-yl) vinyl)phenyl)-3-(2-(2-hydroxypropan-2-yl)phenyl)propyl)thio) methyl)cyclopropyl)acetate	577953-88-9			
10.2	S,E)-1-(3-(2-(7-chloroquinolin-2-yl) vinyl)phenyl)-3-(2-(2-hydroxypropan-2-yl)phenyl) propan-1-ol	142569-70-8			
11.	Nicardipine HCl & its intermediates	54527-84-3		To Treat high blood pressure	
11.1	1-{2-[benzyl(methyl)amino] ethoxy} ethanol	101-98-4			
11.2	2-methylaminoethanol	109-83-1			

12.	2-hydroxypropane-1,2,3-tricarboxylate	546-46-3		Antioxidant and strengthens the immune system
13.	Isopropyl bromide	75-26-3		Cyclopentolate/ Mydriatic
14.	Butyl bromide	109-65-9		Tetracaine/ Local anesthetic
15.	Pentyl bromide	110-53-2		Neticonazole/ Anti-fungal
16.	Hexyl bromide	111-25-1		Exalamide/ Anti-fungal
17.	1,4-Dibromobutane	110-52-1		Pentoxyverine/ Anti-convulsant
18.	Cyclopropyl bromide	4333-56-6		Ciprofloxacin/ Anti-biotic
19.	Cyclohexyl bromide	108-85-0		Cilostazol/ Anti-platelet
20.	N Propyl Bromide	106-94-5		Albendazole/ Anthelmintic
21.	Iso Butyl Bromide	78-77-3		Sibutramine/ To treat obesity
22.	Meta Bromo Nitro Benzene	585-79-5		Tramadol/ Analgesics
23.	Meta Bromo Anisole	2398-37-0		Tramadol/ Analgesics
24.	n pentyl bromide	110-53-2		Neticonazole/ Antifungal
25.	N Bromo Succinimide	128-08-5		Telmisartan/ To treat high blood pressure
26.	4-methyl-2-cyanobiphenyl	114772-53-1		Irbersartan/ To treat high blood pressure
27.	4-bromomethyl-2-cyanobiphenyl	114772-54-2		Losartan/ To treat high blood pressure
28.	1,4-dibromobutane	110-52-1		Butorphanol/ To treat moderate to severe pain
29.	Cis Bromo Benzoate	61397-56-6		Ketoconazole/ Antifungal
30.	1,2,4 Triazole	288-88-0		Fluconazole/ Antifungal
31.	Methyl 4'-bromomethyl biphenyl-2-carboxylate	114772-38-2		Telmisartan/ To treat high blood pressure
32.	3-Nitroacetophenone	121-89-1		Fenoprofen Calcium/ Anti-inflammatory
33.	3-Hydroxyacetophenone	121-71-1		Fenoprofen Calcium/ Anti-inflammatory
	R&D		**0.1**	
	TOTAL		**40.1**	

3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
4) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
5) During the meeting dated 29.11.2021, the project was appraised based on the information furnished in

Form – 1, Pre-Feasibility Report, Environment Management Plan and details submitted by e-mail

6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.

7) This is Greenfield project for API and Its Intermediates plant at 4707-A/13, G.I.D.C. Industrial Estate, Ankleshwar, Tal: Ankleshwar, Dist: Bharuch – 393 002, Gujarat. Total plot area is 1279.05 Sq. m.

8) Committee noted the following:
   - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exit, 5.5 m wide road, OHC, production area, raw material & finished goods storage area, ETP area, hazardous waste storage area, utility area, greenbelt within premises, etc.
   - ✓ Domestic effluent will be treated in ETP along with industrial effluent & then sent to Common MEE of M/s. BEIL.
   - ✓ Membership certificate for CMEE is obtained.

9) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.

10) Looking to Product profile committee informed for submission of Proof of Monobenzone and Hydroxyapatite as API products & Revised CER details, submitted by PP, through e-mail.

11) PP submitted US pharmacopeia and the monographs of Monobenzone and removed hydroxyapatite from product list and stated that there will be no change in Water Requirement, Wastewater generation or Hazardous waste generation due to removal of Hydroxyapatite from product list and revised CER details.

12) Committee found submission of project proponent satisfactory.

13) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020

14) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A-1</td><td>Total cost of Proposed Project
(Rs. in Crores):

<table><tr><th>Total Project</th></tr><tr><td>Rs. 3 Crores</td></tr></table>
Break-up of proposed project Cost:

<table><tr><th>Details</th><th>Project Cost
(Rs. In Crores)</th></tr><tr><td>Land</td><td>0.35</td></tr></table></td><td></td></tr>
</table>

Building	0.70
Machinery	1.0
Env. & Safety	0.88
Miscellaneous	0.07
Total	**3.0**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	**Unit**	**Detail**	**Capital Cost (Rs. In Crore)**	**Operating Cost (Rs. In Crore)**	**Maintenance Cost (Rs. In Crore)**	**Total Recurring Cost (Rs. In Crore)**
1	Waste Water	Membership cost of CMEE, Cost of ETP & treatment cost	0.11	0.80	0.19	0.99
2	Air	Cost of Stack Installation, Scrubber & APCM	0.22	0.03	0.01	0.04
3	Hazardous Management	Membership cost & Disposal cost to TSDF/ CHWIF	0.01	0.35	0.07	0.42
4	Fire & Safety	Fire fighting equipment's & Integrated DCS	0.37	0.03	0.01	0.04
6	Green Belt Development	Trees & maintenance	0.025	0.006	0.001	0.007
7	Occupational Health	OHC, Training & medical examination of employees	0.025	0.02	0.01	0.03
8	Noise Control	Acoustic Enclosure	0.06	0.003	0.002	0.005
9	CER Funds	2% as per OM dated 01/05/2018	0.06	0.06	0.0	0.06
Total			**0.88**	**1.29**	**0.29**	**1.59**

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -
PP shall carry out CER activities as below:	

✓ Awareness campaign to be organized by the project proponent for water conservation & ground water recharge techniques & construction of rain water harvesting tanks at Piraman & Kapodra village

B **Land / Plot ownership details:**

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/FTO/ANK1/1575 Dated:28/09/2021

B-1 **Plot area**

Total Plot area
1279.05 Sq. m.

-

B-2

Area adequacy

➢ .

S. N.	Particular	Qty. in MT/KL	Remark	Area Required	Area Proposed	G. Floor	F. Floor	S. Floor	% G.Floor
				Sq. Mt.					
1	Finished Goods Area	20 MT	2 week inventory	20	29.4	29.4	-	-	2.30
2	Drum storage area (Flammable chemicals)	6 KL (30 nos X 200 Lit)	At a Time	15	30	30	-	-	2.35
	Drum storage area (Toxic chemicals)	4 KL (20 nos X 200 Lit) + 1.3 MT (50 Kg X 26 Bags)	At a Time	20	30	30	-	-	2.35
	Drum storage area (Corrosive chemicals)	8.0 KL (40 nos X 200 Lit) + 0.9 MT (3 Kg X 300 Bottles)	At a Time	25	30	30	-	-	2.35

3	Solvent & Spent Solvent Area	14 KL (70 nos X 200 Lit)	At a Time	35	55.85	55.85	-	-	4.37
4	Haz. waste storage area	110 MT	90 days inventory	36	37.8	37.8	-	-	2.96
5	ETP Area	ETP: 10 KLD	-	15	21	21	-	-	1.64
6	Boiler & Utility	1 Nos. Boiler + 1 Nos. TFH + D G Set	-	21	27	27	-	-	2.11
7	OHC Center	--	-	24	16	16	-	-	1.25
8	Mfg. area (G+2)	1.33 MT/D Cap.	MT/ day	250	300	100	100	100	7.82
9	Admin & R&D area	--	--	48	48	24	24	-	1.88
10	Green Belt @ 33.0 %	33.0 %	33.0 % of Plot	422	422	422	-	-	32.99
11	Security Cabin	---	---	4	4	4	-	-	0.31
12	Road Area	5.5 Mtr Wide	5.5 Mtr Wide	452	452	452	-	-	35.34
Total				**1387.0**	**1503.05**	**1279.05**	**124.0**	**100.0**	**100**

Area Adequacy table:

- Hence, adequate area is available for proposed new Facility.

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 **Green belt area**

	Total (Sq. meter)
Area in Sq. meter	422 Sq. m.
% of total area	33.0%

Comments:

The condition shall be given that -

- ✓ The PP shall develop green belt (422 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Total
20

-

D **WATER**

D-1 **Source of Water Supply**

- Ankleshwar GIDC Water supply.

Comments:

- Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	**Quantity KLD**
(D) Domestic	2.0
(E) Gardening	1.5
(F)	
Process	9.5
Washing	1.0
Boiler	4.0
Cooling	4.0
Others (Scrubber)	0.46
Industrial Total	**18.96**
Grand Total (A+B+C)	**22.46**

-

Comments:

- ✓ The water consumption above is found to be calculated considering

	the worst case scenario and in any case the water requirement shall not exceed the same.
D-3	**Waste water generation (KLD)**

-

Category	Waste water KLD	Remarks
(C) Domestic	1.6	Send to ETP
(D) Industrial		
Process & R&D	6.6	8.4 KLD from Process & utilities & 1.6 KLD from Domestic waste water will be treated in ETP & 10.0 KLD then sent to Common MEE of M/s. BEIL, Ankleshwar for further treatment & disposal.
Washing	1.0	
Boiler	0.4	
Cooling	0.4	
Others (Scrubber)	0.6*	*Will be re-used or sell to end user under Rule-9 permission
Total Industrial waste water	**8.4**	
Total [A + B]	**10.0**	

-

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

1.6 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to CMEE.

Comments:

- ✓ Domestic wastewater generation shall not exceed 1.6 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

D-5	Break-up of waste water disposal & facility (For Industrial)

Sr. no.	Quantity KLD	Facility
1	8.4 KLD Industrial + 1.6 KLD Domestic	Common MEE of M/s. BEIL, Ankleshwar
2	0.6 Scrubbing Solution	*Will be re-used or sell to end user under Rule-9 permission
Total	**10 KLD**	**To Common MEE of M/s. BEIL, Ankleshwar**

Comments:

1. Industrial effluent shall be treated as below.
   - 8.4 KLD from Process & utilities & 1.6 KLD from Domestic waste water will be treated in ETP & 10.0 KLD then sent to Common MEE of M/s. BEIL, Ankleshwar for further treatment & disposal.
2. Unit shall provide ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	AIR
E-1	Power (Electricity) requirement : 100 KVA
E-2	**Flue gas emission details**

-

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler (0.4 TPH)	20	Natural Gas	360 SCM/ Day	SPM SO_2 NOx	Adequate Stack Height
2	Thermic Fluid Heater (2 Lac Kcal)	20	Natural Gas	800 SCM/ Day	SPM SO_2 NOx	Adequate Stack Height
3	D.G. set (80 KVA)	11	HSD	200 Lit/Day	SPM SO_2 NOx	Adequate Stack Height

-

E-3	Process gas

-

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1.	Reaction Vessel (Bromination) (Methyl 4'-bromomethyl	Br_2 HBr	18	Two Stage Water + Alkali Scrubber

	biphenyl-2-carboxylate)			
2.	Reaction Vessel (Amination) (1,2,4 Triazole)	NH_3	18	Two Stage Acid Scrubber
3.	Reaction Vessel (Nitration) (Telmisartan)	NOx	18	Two Stage Alkali Scrubber

-

E-4	**Fugitive emission** details with its mitigation measures.

Following measures will be adopted to prevent and control fugitive emissions…

1. Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
2. Raw materials loading and unloading will be done in covered area
3. Care will be taken to store construction material properly to prevent fugitive emissions, if any.
4. Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
5. Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
6. Periodic monitoring of work area will be carried out to check the fugitive emission.
7. To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
8. Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
9. Minimum number of flanges, joints and valves in pipelines.
10. Enclosures to chemical storage area, collection of emission from loading of raw materials in particular solvents through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured.
11. Adequate ventilation will be provided.
12. Periodic monitoring of work area will be carried out to check the fugitive emission as per the norms of Gujarat Factory Rules.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid

heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

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Sr. no.	Type/ Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/ Annum)	Management of HW
1.	Discarded HDPE Drums/Bags	Raw Material and Storage	Sch-I/ 33.1	6.0	Collection, Storage, Transportation and sell to Register Re-processors after decontamination.
2.	Used / Spent Oil	Equipment & Machinery	Sch-I/ 5.1	0.12	Collection, Storage, Transportation and sell to registered recycler.
3.	Spent Catalyst	Process (Lamotrigine)	Sch-I/ 28.3	12.0	Collection, Storage, Transportation and sent to registered regenerator.
4.	ETP Sludge	ETP	Sch-I/ 35.3	66.0	Collection, Storage, Transportation and sent to co-processing or common TSDF site.
5.	Inorganic Solid Waste	Process (Nicardipine HCl)	Sch-I/ 28.1	254.4	
6.	Distillation Residue	Distillation	Sch-I/ 20.3	40.0	Collection, Storage, Transportation and sent for co-processing in cement industries or CHWIF Site.
7.	Spent Carbon	Process (Clopidogrel Bisulfate)	Sch-I/ 28.2	28.8	
8.	Organic Waste	Process (Sitagliptin)	Sch-I/ 28.1	174.72	
9.	Off Specification Products	Process	Sch-I/ 28.4	4.0	
10.	Sulphuric Acid (80%)	Process (3-Hydroxy acetophenone)	Sch-II/ B15	177.6	Collection, Storage and Reuse within premises or sell to end user under Rule-9 permission.
11.	Sodium Nitrite	Scrubber	Sch-I/ 28.1	153.6	

12.	Spent Solvent	Process	Sch-I/ 28.6	2400.0	Collection, Storage, in-house Distillation and Reuse within plant premises.
13.	Ammonium Chloride	Scrubber	Sch-I/ 28.1	168.0	Collection, Storage, Transportation and sell to end user under Rule-9 permission.
14.	Hydrogen Bromide (48%)	Scrubber	Sch-II/ B15	140.0	
15.	Sodium Bromide	Scrubber	Sch-I/ 28.1	95.0	

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

No such wastes generated.

Comments:

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

Sr. No.	Name of the Product	Name of Solvent used	Solvent Quantity in (Kg)	Solvent Recovered quantity (Kg)	Solvent Loss quantity (Kg)	Percentage Recovered (%)	Percentage Loss (%)
1.	Lamotrigine & its intermediates	Acetonitrile	4.00	3.89	0.11	97.25	2.75
		IPA	4.00	3.89	0.11	97.25	2.75
2.	Monobenzone	IPA	0.50	0.48	0.02	96.00	4.00
3.	Levetricetam & its intermediates	MDC	1.76	1.71	0.05	97.16	2.84
		Ethyl Acetate	3.35	3.23	0.12	96.42	3.58
4.	Fexofenadine Hydrochloride & its intermediates	MDC	1.75	1.7	0.05	97.14	2.86
		DMSO	2.16	2.08	0.08	96.30	3.70
		Methanol	2.91	2.81	0.1	96.56	3.44
		Ethyl Acetate	1.88	1.84	0.04	97.87	2.13
		IPA	0.33	0.32	0.01	96.97	3.03

5.	Pidotimod & its intermediates	MDC	5.00	4.82	0.18	96.40	3.60
6.	Febuxostat & its intermediate	IPA	4.90	4.84	0.06	98.78	1.22
		Acetone	10.89	10.74	0.15	98.62	1.38
7.	Clopidogrel Bisulfate & its intermediates	Methanol	3.95	3.85	0.1	97.47	2.53
		MDC	16.88	16.28	0.6	96.45	3.55
		Toluene	3.12	3.03	0.09	97.12	2.88
		Acetonitrile	6.30	6.1	0.2	96.83	3.17
		Ethyl Acetate	5.60	5.4	0.2	96.43	3.57
		Acetone	15.74	15.14	0.6	96.19	3.81
8.	Sitagliptin Phosphate & its intermediates	MDC	5.00	4.85	0.15	97.00	3.00
		IPA	4.00	3.86	0.14	96.50	3.50
		Methanol	7.00	6.76	0.24	96.57	3.43
9.	Montelukast Sodium & its intermediates	Toluene	13.52	13.19	0.33	97.56	2.44
		Acetonitrile	6.50	6.42	0.08	98.77	1.23
		DMF	7.73	7.56	0.17	97.80	2.20
		Hexane	3.69	3.53	0.16	95.66	4.34
		Ethyl acetate	11.62	11.5	0.12	98.97	1.03
		Cyclohexane	9.40	9.28	0.12	98.72	1.28
10.	Nicardipine HCl & its intermediates	Ethyl Acetate	4.44	4.27	0.17	96.17	3.83
		Toluene	6.67	6.41	0.26	96.10	3.90
		IPA	3.33	3.19	0.14	95.80	4.20
		Acetone	8.22	7.94	0.28	96.59	3.41
11.	Meta Bromo Anisole	Toluene	3.44	3.32	0.12	96.51	3.49
12.	4-Methyl-2-Cyano biphenyl	THF	2.00	1.99	0.01	99.50	0.50
		Toluene	3.30	3.29	0.01	99.70	0.30
13.	4-Bromo methyl-2-Cyano biphenyl	EDC	1.20	1.19	0.01	99.17	0.83
		Toluene	0.80	0.79	0.01	98.75	1.25
14.	Cis Bromo Benzoate	Toluene	4.17	4	0.17	95.92	4.08
		Methanol	2.00	1.93	0.07	96.50	3.50
15.	Methyl 4'-bromomethyl biphenyl-2-carboxylate	Toluene	2.31	2.25	0.06	97.40	2.60
		MDC	2.31	2.25	0.06	97.40	2.60
		Cyclohexane	2.41	2.35	0.06	97.51	2.49
16.	3-Nitro acetophenone	EDC	**2.02**	1.95	0.07	96.53	3.47
		Methanol	**1.22**	1.19	0.03	97.54	2.46
17.	3-Hydroxy acetophenone	Toluene	**2.00**	1.96	0.04	98.00	2.00

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally

closed system.

- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement.
- The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

-

G-3	LDAR proposed:

To prevent losses of these solvents in atmosphere, following infrastructure shall be used in addition to LDAR program

- Leak Free Pumps for transfer of solvents
- MSW Gaskets in solvent pipelines to prevent leakage from flanges
- Minimum number of flanges, joints and valves in pipelines.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- All the rotating equipments like pumps will be installed with Mechanical Seals to arrest any sort of emissions.
- Condenser and scrubber post Reactor with cooling arrangement
- Enclosures to chemical storage area, collection of emission from loading of raw materials in particular solvents through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured.
- In case the small spillage or leakage observed, first pour the china clay (vermiculate) on material and collect the contaminated china clay (vermiculate) and send to ETP.
- If the spillage is of inflammable liquid, switch off all the power supply in the area to prevent Electric Spark
- Flanges will be sealed so less loss will be there.
- Two condensers will be installed with cooling water and chilled brine to recover the solvent.
- **Primary Condenser HE-01:** Cooling Tower water or Chilled water (at 5^0C) will be used to condense the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a Secondary Condenser
- **Secondary Condenser HE-02**: Chilled Brine at -05 ^{0}C will be used to trap any traces of Solvent which is slipped from Secondary condenser.
- **VOC Trap Condenser HE-03:** Chilled Brine at -15 ^{0}C will be used to trap any traces of Solvent which is slipped from Secondary condenser**.**

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals

-

Storage details	Name of major Hazardous chemicals	Remarks
Drums	Methanol, Toluene, Dimethyl Formamide, Methylene Di Chloride, Sulphuric Acid, Liq. Ammonia, Hydrochloric Acid, Nitric Acid, IPA	

Safety details:

- Storage facility constructed as per the norms of explosive dept. & regulatory requirements.
- Breather valve & flame arrestor provided for all storage areas.
- Explosion proof electric fittings are provided in the area.
- Double earthing provision to all the storage area & flange to flange jumpers are provided & being checked periodically.
- Periodically checking of Earth pit resistance & continuity.
- Unloading & transferring of material done under close supervision & using pump or gravity.
- Firefighting facilities such as Fire hydrant system with fire monitor, Fire Extinguishers & Sand buckets are provided.
- Dyke wall & fencing provided.
- Closed handling and transferring systems for Hazardous chemicals.
- Fire Extinguishers and absorbents will be available near storage area.
- Drums to be stored on pallet with the suitable trap.
- Trained & dedicated persons are engaged for material handling activities.
- Smoking is strictly prohibited in this area. Cautionary notice boards are displayed.
- Level indicators provided for solvent tanks.
- Safety Shower cum eye washer provided.

-

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	**Safety measures including Automation**
Bromination	• Integrated DCS System will be installed. • Cooling & Chilling system provided to vent. • Maintain bromine vapor concentration in the work area to less than 0.1 ppm with adequate exhaust hoods, ventilation systems and scrubbers. Analyze air for proper control. • Transfer or repackage bromine only in a controlled, closed environment. • Exhaust ventilating systems will be used in enclosed areas where bromine is handled.
Amination	• Integrated DCS System will be installed. • Valve, pipeline will be checked and maintain, in good condition. • Ammonia cylinders will be stored in cylinder storage area. Cylinder storage license will be obtained from CCOE as per Gas cylinder rules. • Ammonia cylinder will be made well ventilated and safe distance will be maintained. • Sprinkler system provision will be made in cylinder storage area. • Ammonia cylinder leakage identification will be done by HCL torch. • Ammonia cylinder leakage control Kit will be kept available at store. • Hazard identification, control measures in case of leakage and first Aid procedure will be prepared and displayed at handling locations. • Copper tube will be used for Ammonia cylinder connection with header. • Sprinkler point and Eyewash/ Safety shower will be provided near Ammonia header point. • ADEQUATE PPE will be kept to handle the Hazard. • ISI Portable fire extinguisher & Hydrant line will be provided as per TAC norms. • Sufficient amount of sand/soil are kept to control any spillage. • Flame proof fitting provided. • Eye washer cum shower will be provided near storage area. • Spark arrester will be installed on all vehicles inside the premises. • SBA set, Canister mask and airline mask will be provided. • Earthing & bonding will be provided.
Nitration	• Total enclosed process system. • Instrument & Plant Air System. • Safety valve and Rupture disc provided on reactor. • Cooling and power alternative arrangement have been made on reactor. • Emergency cooling alternative arrangement have been made on reactor. • Nitric acid storage away from the auto clave reactor. • Open well ventilated and fragile roofs will be provided to on

	reactor. • Scrubbing system will be installed to scrub nitrous gases generated during reaction. • SOP will be prepared and operators will be trained for the same. • Employees will be trained to handle nitric acid and continuous training schedule will be made. • Dumping vessel arrangement will be made.

H-3	**Details of Fire Load Calculation**

Total Plot Area:	1279.05
Area utilized for plant activity:	739.0
Area utilized for Hazardous Chemicals Storage:	170.0
Number of Floors:	G+2
Water requirement for firefighting in KLD:	3.695 KLD
Water storage tank provided for firefighting in KLD:	100.0 KLD
Details of Hydrant Pumps:	Kirloskar main pump (6m3/Hr, 60-meter head) and one jockey pump (4 m3/hr, 50-meter head) will be provided
Nearest Fire Station :	DPMC Fire Station @ 2.8 kms
Applicability of Off Site Emergency Plan:	Not Applicable

Comments:

- ✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 100 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Shall be obtained after receipt of EC.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	10
Number of Contractual person/Labour:	10
Area provided for OHC:	16 m^2
Number of First Aid Boxes:	2
Nearest General Hospital:	Triloki Hospital @ 2.48 kms
Name of Antidotes to be store in plant:	Sodium Hydro-Carbonate (4% Conc.), Milk of Magnesia, Diazepam, Soframycin, Methylene Blue (1% Solution)

-

Comments

- ✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

15) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.

3. PP shall carry out proposed project/activities in respect of Active Pharmaceutical Ingredients (API) as per the amended EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (a) R & D products shall be of similar chemistry in line with the EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and the pollution load shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity.
6. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
7. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
    c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
    d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
    e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
    f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

l) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety

m) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

10. Total water requirement for the project shall not exceed 22.46 KLD. Unit shall reuse 7.2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 15.26 KLD and it shall be met through GIDC only.
11. The industrial effluent generation from the project shall not exceed 8.4 KLD.
12. Industrial effluent shall be treated as below.
    - 8.4 KLD from Process & utilities & 1.6 KLD from Domestic waste water will be treated in ETP & 10.0 KLD then sent to Common MEE of M/s. BEIL, Ankleshwar for further treatment & disposal.
    - Treated waste water shall be sent to authorized Common MEE facility only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. Domestic wastewater generation shall not exceed 1.6 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
14. Unit shall provide ETP with adequate capacity.
15. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
16. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
17. Proper logbooks of ETP, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

18. Unit shall not exceed fuel consumption for Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
19. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
20. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as

mentioned above.

21. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

22. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.

23. For control of fugitive emission, VOCs, following steps shall be followed :

    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

24. Solvent management shall be carried out as follows:

    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

25. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, Br_2, NH_3, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels

shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

26. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
27. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
28. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
29. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
30. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
31. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

32. The PP shall develop green belt (422 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

33. The project proponent shall carry out the entire activities [Awareness campaign to be organized by the project proponent for water conservation & ground water recharge techniques & construction of rain water harvesting tanks at Piraman & Kapodra village] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

34. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

35. Project proponent shall inform to all the concerned authorities including Municipal Corporation and

District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.

36. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
37. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
38. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
39. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
40. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
41. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

4.	SIA/GJ/IND2/227000/2021	**M/s. Horster Life Science Pvt. Ltd.** Plot No.: 905/12/A, GIDC Panoli, Tal: Ankleshwar, Dist.: Bharuch – 394116, Gujarat.	Appraisal

Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.28. Type of application:	EC-Expansion
1.29. Proposal no.	SIA/GJ/IND2/227000/2021
1.30. Category of Project :	5 (f) – B2
1.31. Date of application :	14/10/2021
1.32. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.33. TOR No. & Date :	Not applicable as project is categorized as B2

1.34. Technical expert / Environmental Consultant :	Self
1.35. SEAC Meeting No. and Date:	315th SEAC Meeting and Agenda No.04 on dated 29/11/2021.
1.36. Compliance of Existing EC & CCA	Self certified Compliance of EC and CC&A enclosed herewith.

2) This is a expansion project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Sr. No.	Name of the Products	API OR INTERMEDIATE	CAS No.	Quantity (MT/Month)			End Use of the Products
				Existing	Proposed	Total	
	Inorganic Products						
1	Copper Sulphate	-	7758-99-8	850	-850	0	Chemical Industries
2	Potassium Sulphate	-	7778-80-5				Chemical Industries
3	Sodium Nitrate	-	7632-00-0				Food Additive & Preservative
4	Mono Ammonium Phosphate	-	7722-76-1				Chemical Industries
	Organic Products						
1	Trifluoro Acetic Anhydride	Intermediate	407-25-0	5	-5	0	Drug Intermediate
2	Trifluoro Methane Sulphonic Anhydride	Intermediate	358-23-6	3	-3	0	Drug Intermediate
3	Ethyl Valerate	API	539-82-2	2	-2	0	As flavour in Bulk Drugs
4	Methyl Valerate	API	624-24-8	2	-2	0	As flavour in Bulk Drugs
5	Cyclohexyl Acetate	API	622-45-5	5	-5	0	As flavour in Bulk Drugs
6	(DFTA) 2,4-Difluoro-Alpha-(1H-1,2,4-Triazole) Acetophenone	Intermediate	86404-63-9	5	35	50	FLUCONAZOLE/ treatment and prevention of fungal infections.
7	Bromo Benzene	Intermediate	108-86-1	10			PHENCYCLIDINE/ Use in treating brain ischemia, hypertension.
8	1H-1,2,4-Triazole	Intermediate	288-88-0	30*			FLUCONAZOLE /treatment and prevention of fungal infections.
9	4-Amino-1,2,4-Triazole	Intermediate	584-13-4	30	10	40	FLUCONAZOLE /treatment and

							prevention of fungal infections.
10	Methyl 3- Amino Crotonate	Intermediate	14205-39-1				AMLODIPINE/treat chest pain (angina)
11	Trimethyl Sulphoxonium Iodide	Intermediate	16029-98-4	0			FLUCONAZOLE/ treatment and prevention of fungal infections.
12	Dimethyl Formamide Dimethyl Acetal	Intermediate	4637-24-5	0			IMATINIB/ treat certain types of cancer
13	Potassium Phthalimide	Intermediate	1074-82-4	0			CARVEDILOL/treatment of hypertension (high blood pressure) and congestive heart failure.
14	Trimethyl Silyel Azide	Intermediate	4648-54-8	0			OSELTAMIVIR/ Prevent and to treat some kinds of influenza or the flu.
15	Benfotiamine	API	22457-89-2	2	19	21	Anti-diabetic
16	Betahistine	API	5638-76-6				to reduce the symptoms of vertigo, tinnitus, and hearing loss associated with Meniere's disease.
17	Indomethacin	API	53-86-1				used to relieve pain, swelling, and joint stiffness caused by arthritis, gout, bursitis, and tendonitis.
18	Ivermectin EP9 / IP	API	70288-86-7				used to treat parasite infestations
19	Dapoxetine	API	1299-38-20-1	0			to treat premature ejaculation in men
20	Doxorubicin IP/BP/EP/USP	API	23214-92-8	0			to treat certain types of bladder, breast, lung, stomach, and ovarian cancer
21	Fusidic Acid	API	6990-06-3	0			to treat skin infections.

22	Isotretinoin	API	4759-48-2	0			for the treatment of severe acne.
23	Methotrexate	API	59-05-2	0			treats cancer by slowing the growth of cancer cells
24	Methylcobalamin	API	68-19-9	0			treatment of peripheral neuropathy, diabetic neuropathy, and as a preliminary treatment for amyotrophic lateral sclerosis.
25	Orlistat	API	96829-58-2	0			To treat high blood pressure, diabetes, high cholesterol, or heart disease.
26	Sildenafil Citrate	API	171599-83-0	0			to treat erectile dysfunction and pulmonary arterial hypertension.
27	Tretinoin	API	302-79-4	0			to treat acne or other skin diseases
28	Vardenafil	API	224785-90-4	0			treat male erectile dysfunction (impotence) and pulmonary arterial hypertension (PAH)
29	Alfacalcidol BP/IP/EP	API	41294-56-8	0			used in the treatment of osteoporosis
30	Calcitriol EP/BP/USP/IP	API	32222-06-3	0			to treat calcium deficiency with hypoparathyroidism (decreased functioning of the parathyroid glands) and metabolic bone disease in people with chronic kidney failure.
31	Methandienone	API	72-63-9	0			it is an anabolic steroid indicated for appetite

							stimulation in patients with anorexia.
32	Oxymetholone	API	434-07-1	0			to treat a low red blood cell count (anemia)
33	Drostanolone Propionate	API	58-19-5	0			treat breast cancer in women
34	Methenolone Enanthate	API	303-42-4	0			treatment of anemia due to bone marrow failure
35	Oxandrolone	API	53-39-4	0			used to help you regain weight lost after surgery, severe trauma, or chronic infections.
36	Stanozolol	API	10418-03-8	0			used in the treatment of hereditary angioedema, which causes episodes of swelling of the face, extremities, genitals, bowel wall, and throat.Stanozolol may decrease the frequency and severity of these attacks.
37	Trenbolone Enanthate	API	1629618-98-9	0			to treat metastatic mammary cancer.
38	Betamethasone Valerate	API	2152-44-5	0			Used to treat a variety of skin conditions
39	Deflazacort	API	14484-47-0	0			used to treat Duchenne muscular dystrophy in adults and children who are at least 5 years old
40	Fluorometholone	API	426-13-1	0			used to treat certain eye conditions due to inflammation or injury
41	Hydrocortisone	API	50-03-3	0			used to treat

	Acetate						inflammatory and pruritic corticosteroid-responsive dermatoses and ulcerative colitis.
42	Dutasteride	API	164656-23-9	0			used for the treatment of symptomatic benign prostatic hyperplasia in men with an enlarged prostate gland
43	Finasteride	API	98319-26-7	0			used to shrink anenlarged prostate (benign prostatic hyperplasia or BPH) in adult men.
44	Tibolone BP	API	5630-53-5	0			used in the treatment of menopausal symptoms like hot flashes and vaginal atrophy, postmenopausal osteoporosis, and endometriosis
45	Progesterone IP/BP/EP/USP	API	57-83-0	0			used for a variety of functions, including contraception, control of abnormal uterine bleeding, maintenance of pregnancy, and prevention of endometrial hyperplasia.
46	Dydrogesterone BP/EP/USP	API	152-62-5	0			Used in the treatment of menstrual disorders such as absent, irregular or painful menstrual periods, infertility, premenstrual syndrome and

							endometriosis.
47	Mesterolone USP	API	1424-00-6	0			used in the treatment of low testosterone levels and infertility in men
48	Norethisterone Enanthate	API	3836-23-5	0			used for contraception, prevention of endometrial hyperplasia in hormone replacement therapy, and in the treatment of other hormone-mediated illnesses such as endometriosis.
49	Tadalafil	API	171596-29-5	0.5*			to treat erectile dysfunction (impotence) and to treat pulmonary arterial hypertension.
50	Mupirocin	API	12650-69-0				to treat skin infections such as impetigo (IM-pe-TYE-go) or a “Staph” infection of the skin.
51	Acarbose	API	56180-94-0	0.5	11.45	12	to control high blood sugar in people with type 2 diabetes.
52	D-Biotin	API	58-85-5				to treat symptoms of biotin deficiency associated with pregnancy, malnutrition, and long-term tube feeding.

53	Tobramycin Sulfate	API	79645-27-5				to prevent or treat a wide variety of bacterial infections.
54	Voglibose	API	83480-29-9	0.05			Used for lowering post-prandial blood glucose levels in people with diabetes mellitus.
55	Albendazole	API	54965-21-8	0			treatment of a variety of parasitic worm infestations
56	Fluconazole	API	86386-73-4	0			treatment and prevention of fungal infections.
57	Pantoprazole Sodium	API	138786-67-1	0			Treatment of Erosive Esophagitis Associated with Gastroesophageal Reflux Disease
58	Boldenone Undecylenate	API	13103-34-9	0			Used to improve physique and performance in human.
59	Nandrolone Decanoate	API	360-70-3	0			to treat anemia in people with kidney failure
60	Testosterone Enanthate	API	315-37-7	0			to treat conditions caused by a lack of this hormone, such as delayed puberty, impotence, or other hormonal imbalances
61	Betamethasone Dipropionate	API	5593-20-4	0			treatment of inflammatory disorders.
62	Betamethasone Sodium Phosphate	API	151-73-5	0			used to treat severe lung or breathing problems, etc.

	63	Clobetasol Propionate	API	25122-46-7	0			used to treat the inflammation and itching caused by a number of skin conditions such as allergic reactions, eczema, and psoriasis.
	64	Clobetasone Butyrate	API	25122-57-0	0			Used for Inflammatory skin conditions such as eczema and dermatitis
	65	Dexamethasone Sodium Phosphate	API	2392-39-4	0			used to treat conditions such as arthritis, blood/hormone disorders, allergic reactions, skin diseases, eye problems, breathing problems, bowel disorders, cancer, and immune system disorders
	66	Fluocinolone Acetonide	API	67-73-2	0			used to treat skin conditions, eczematous otitis externa, diabetic macular edema, and non-infectious uveitis of the posterior segment of the eye.
	67	Fluticasone Propionate	API	80474-14-2	0			used topically to relieve inflammatory and pruritic symptoms of dermatoses and psoriasis

68	Hydrocortisone Hemi Succinate	API	2203-97-6	0			used to treat severe allergic reactions, dermatologic diseases, endocrine disorders, gastrointestinal diseases, hematological disorders, neoplastic diseases, nervous system conditions, ophthalmic diseases, renal diseases, respiratory diseases, and rheumatic disorders.
69	Methyl Prednisolone	API	83-43-2	0			used to treat many different inflammatory conditions such as arthritis, lupus, psoriasis, ulcerative colitis, allergic disorders, gland (endocrine) disorders
70	Budesonide	API	51333-22-3	0	0.2	0.2	Used to treat wheezing and coughing

71	Methylprednisolone Hemi Succinate	API	2921-57-5	0			used to treat severe allergic reactions, dermatologic diseases, endocrine disorders, gastrointestinal diseases, hematological disorders, neoplastic diseases, nervous system conditions, ophthalmic diseases, renal diseases, respiratory diseases
72	Triamcinolone Acetonide	API	76-25-5	0			used to treat the itching, redness, dryness, crusting, scaling, inflammation, and discomfort of various skin conditions
73	R & D	-	-	0	0.1	0.1	-
	Total			**64.55**	**58.75**	**123.3**	

3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
4) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
6) Committee Noted the following:
   - ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
   - ✓ Upon asking regarding Compliance status of existing EC, PP could not replied satisfactory.
   - ✓ PP could not provide membership certificate of Common Facility.
   - ✓ Green belt area development is found not adequate.
7) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020

8) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Existing	Proposed	Total
4.7476 Crores	3.20 Crores	7.9476 Crores

Break-up of proposed project Cost:

Details	Existing (Rs. In Crores)	Proposed (Rs. In Crores)	Total (Rs. In Crores)
Land	**0.92**	**0**	**0.92**
Building	**0.40**	**0.90**	**1.30**
Machinery	**1.30**	**1.80**	**2.80**

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A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Operating Cost (Rs. In Crores)	Maintenance Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	Primary ETP, CMEE/CSD Membership and its disposal	0.05	0.05	0.005	0.05
2	Air	MDC followed by water Scrubber, alkali Scrubber	0.07	0.01	0.01	0.02
3	Hazardous Management	Membership & Disposal	0.02	0.045	0.005	0.05
4	Fire & Safety	Water tank and Pipes, Fire hydrants, Fire extinguishers, PLC	0.15	0.01	0.03	0.04

		system for process plant, DCS System				
5	AWH Monitoring	Monitoring &LDAR (VOC) monitoring	0.005	0.005	0	0.005
6.	Green Belt Developme nt	Greenbelt and Gardner	0.005	0.001	0.001	0.002
7.	Occupation al Health	OHC and Medical kit & antidotes, Monthly Checkup, Safety training, safety equipments like PPE's (safety gloves, gas mask, safety shoes, safety harness, safety goggles, safety shoes, eye wash unit)	0.05	0.01	0.005	0.015
8.	CER Activities	1% of Proposed Investment	0.0290	0.0015	0.0015	0.003
Total			**0.3790**	**0.1325**	**0.0575**	**0.1850**

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Provide solar street lights, RO plant with AMC in Village Kharod
- ✓ Tree plantation with tree guard, Development of garden at Gram panchayat of Village Bakrol

B — **Land / Plot ownership details:**

Plot No. 905/12/A is in possession of M/s. Horster Life Science Pvt. Ltd.

B-1 — **Plot area**

Existing	Proposed	Total
1612.8 Sq. m.	0 Sq. m.	1612.8 Sq. m.

-

B-2

Area adequacy

- Unit has total 1612.8 Sq.m plot area. Unit will discontinue some existing products and expand the capacities of existing products and introduce some new products. Unit will be provided G+3 floor for Production Plant.

Area Adequacy of Raw material Storage:

Raw Material Qty. MT/Month	Raw Material Qty. MT/5 days or week	Mode of Storage	Nos. of Drums/Bags required	Required Area with provision of Rack System in Sq. m	Provided Area with provision of Rack System in Sq. m
Liquid Raw Material – 1064 MT/Month	177 MT/5 days	Drums	886 Nos.	199 Sq. m	205 Sq. m
Solid Raw Material – 41 MT/Month	7 MT/5 days	Bags	140 Nos.	14 Sq. m	205 Sq. m
Solvent – 327 MT/Month	55 MT/5 days	Drums	275 Nos.	61 Sq. m	70 Sq. m

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 — **Green belt area**

	Existing	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	150.00	172.56 + 500.00 (Outside of Plot premises) = 672.56	322.56 + 500.00 = 822.56 (In House + Outside of plot premises)
% of total area	9.30	10.70 + 31 (Outside of plot premises) =23.70	20 + 31 = 51

Comments:

The condition shall be given that -

- ✓ The PP shall develop green **belt [322.56 m2 (20%) inside plant premises + 500 m2 (31%)** at Common Plot in Panoli GIDC**= Total: 822.56 Sq. m.) i.e. 51 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Existing	Proposed	Total
12 Nos.	10 Nos.	22 Nos.

-

D **WATER**

D-1 **Source of Water Supply**

- GIDC Water Supply Department, Panoli

Comments:

- Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(G) Domestic	3.35	0	3.35	
(H) Gardening	2.00	0	2.00	
(I) Industrial				
Process	6.84	-0.84	6.00	
Washing	0.30	3.20	3.50	
Boiler	2.50	27.50	30.00	
Cooling	3.00	4.00	7.00	
Others	0.34	0.56	0.90	Scrubber
Industrial Total	12.98	34.42	47.40	
Grand Total (A+B+C)	18.33	34.42	52.75	

-

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3	**Waste water generation (KLD)**
	-

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(E) Domestic	2.50	0	2.50	
(F) Industrial				
Process	1.20	8.47	9.67	
Washing	0.30	3.20	3.50	
Boiler	0.30	1.20	1.50	
Cooling	0.40	0.25	0.65	
Others	0.34	0.56	0.90	Scrubber- it will be reused in process And/or sold under rule 9.
Total Industrial waste water	2.20	13.12	15.32	

-

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

~~XX KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.~~

OR

2.50 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to CMEE.

Comments:

- ✓ Domestic wastewater generation shall not exceed xx KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

  OR

  Domestic wastewater generation shall not exceed 2.50 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
- ✓ Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	**Quantity**	**Facility**
1	15.32 KLD	CMEE of M/s. BEIL
2		
Total	15.32 KLD	

Comments:

4. 15.32 KLD Industrial effluent will be treated in primary ETP and finally sent to CMEE of M/s. BEIL for further treatment.

~~5. Industrial effluent shall be segregated into two streams (1) Concentrated (2) Dilute stream shall be treated as below.~~

- ~~✓ **Concentrated Stream (110 KLD)**~~
  - ~~➢ 110 KLD, Concentrated stream collected, neutralized and treated in Stripper, In-house MEE Plant followed by Biological process and RO Plant. RO Permeate shall be reused within premises and RO Reject shall be sent back to MEE.~~
  - ~~➢ Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.~~
- ~~✓ **Dilute Stream (85 KLD):**~~

- ~~35 KLD industrial effluent from process generated from utilities shall be neutralized and then sent to Common facility of NCT (Narmada Clean Tech) for further treatment and disposal.~~
- ~~50 KLD industrial effluent generated from scrubber, washing, Cooling tower and Boiler shall be neutralized and then sent to Common facility of NCT (Narmada Clean Tech) for further treatment and disposal.~~
- ~~Treated waste water shall be sent to CETP of NCT only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment~~

6. Unit shall provide ~~STP and~~ ETP with adequate capacity.
7. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement : 200 KVA
E-2	**Flue gas emission details**

-

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing						
1	Baby Boiler (800 Kg/hr)	9	Natural gas	600 m^3/day	PM SOx NOx	Adequate Stack height
2	Thermic Fluid Heater (4 Lakhs K Cal/hr)	9	Natural gas	600 m^3/day		Adequate Stack height
3	D.G. Set (125 HP)	10	HSD	25 Lit/hr		Adequate Stack height
Proposed						
1	Steam Boiler (1.5 TPH)	30	Natural gas and/or Bio Coal	6000 SCM/day and/or 5 MT/day	PM SOx NOx	Multi cyclone separator followed by water scrubber

Note: Existing 800 kg/hr capacity of baby boiler will be discontinued after proposed expansion and after proposed expansion stack height of existing thermic fluid heater will

be increased from 9 m to 20 m.
-

E-3	Process gas

-

Sr. no.	Specific Source of emission (Name of the Product &Process)	Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Existing				
1	Vent attached to reactor	HCl, HBr, NH_3	12	Water Scrubber
After Proposed Expansion				
1	Process vessel-I	HCl, SO_2	12	Two stage water followed by alkali scrubber
2	Process vessel-II	HBr	12	Two Stage alkali scrubber
3	Process vessel-III	NH_3	12	Two Stage water scrubber

-

E-4	**Fugitive emission** details with its mitigation measures.

- Concrete road will be developed within plot premises to avoid fugitive dust due to vehicle movement.
- Manufacturing activity will be carried out in closed reactors/vessels and
- Regular checking and maintenance of the same will be carried out to avoid any leakages.

All the raw materials will be stored in closed containers and in sealed bags and will be handled through closed system to avoid the handling losses.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	Hazardous waste
F-1	Hazardous waste management matrix
-	

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1	Used Oil	From Machineries	Sch:I/5.1	0.03	0.03	0.06	Collection, Storage, Transportation and Disposal by selling to registered recycler.
2	Discarded Containers/ Barrels/Liners	From Raw Materials	Sch:I/33.1	100	0	100	Collection, Storage, Transportation and Disposal by selling to registered recycler.
3	Process Residue/ Process Waste	From Manufacturing Process	Sch:I/28.1	119	107.8	226.8	Collection, Storage, Transportation and Disposal for co-processing or sent to CHWIF for the incineration.
4	Spent Charcoal	From Manufacturing Process	Sch:I/28.3	0.17	79.03	79.2	Collection, Storage, Transportation and Disposal for co-processing or sent to CHWIF for the incineration.
5	Hyflow	From Manufacturing Process	Sch:I/28.3	0	43.2	43.2	Collection, Storage, Transportation and Disposal for

							co-processing or sent to CHWIF for the incineration.
6	Spent Solvent	From Manufacturing Process	Sch:I/28.6	23.83	7230.17	7254.00	Collection, Storage and Reuse after in-house distillation and/or outside distillation.
7	Distillation Residue	From Manufacturing Process	Sch:I/36.1	0.52	245.08	245.6	Collection, Storage, Transportation and Disposal for co-processing or sent to CHWIF for the incineration.
8	ETP Sludge	From ETP	Sch:I/35.3	28.8	18.9	47.7	Collection, Storage, Transportation and Disposal at TSDF Site.
9	Liq. Ammonia	From Manufacturing Process	Sch:I/28.1	520	347.6	867.6	Collection, Storage, Transportation and disposal by selling to actual end users having Rule-9 Permission.
10	Aluminium Hydroxide	From Manufacturing Process	Sch:I/28.1	393	-393	0	---
11	Phosphoric Acid	From Manufacturing Process	Sch:I/28.1	2343	-2343	0	---
12	Hydrobromic Acid (25% - 30%)	From Manufacturing Process	Sch:I/28.1	107	202.6	309.6	Collection, Storage, Transportation and disposal by selling to actual end

							users having Rule-9 Permission.
13	30% HCl	From Manufacturing Process	Sch:II/B-15	51	68.9	119.9	Collection, Storage and Reuse in Manufacturing Process.
14	Sodium Methyl Sulphate	From Manufacturing Process	Sch:I/28.1	0	532.8	532.8	Collection, Storage, Transportation and disposal by selling to actual end users having Rule-9 Permission.
15	Aq. of Aluminium Chloride	From Manufacturing Process	Sch:I/28.1	0	786	786	Collection, Storage, Transportation and disposal by selling to actual end users having Rule-9 Permission.
16	Spent Catalyst	From Manufacturing Process	Sch:I/28.2	0	3.6	3.6	Collection, Storage and Reuse in Manufacturing Process.
17	Off Specification Products	Rejected products after laboratory test	Sch:I/28.4	0	2.0	2.0	Collection, Storage, Transportation and Disposal for co-processing or sent to CHWIF for the incineration.

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Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.

	✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
F-2	Non- Hazardous waste management matrix

✓ Fly Ash generation will be 180 MTPA.

✓ STP sludge generation will be xx MTPA

Comments:

✓ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

✓ STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

S. No.	Product wise Solvent	CAS No.	Solvent Consumption, MT/Month			Solvent Recovery, MT/Month	% of Recovery
			Existing	Proposed	Total		
6	**(DFTA) 2,4-Difluoro-Alpha-(1H-1,2,4-Triazole) Acetophenone**						
	Methyline Dichloride (MDC)	75-09-2	3.64	32.78	36.42	34.96	96
	Isopropyl Alchohol (IPA)	67-63-0	5.16	46.43	51.59	49.53	96
7	**Bromo Benzene**						
	Benzene	71-43-2	4.98	19.90	24.88	24.13	97
8	**1H-1,2,4-Triazole**						
	Formamide	75-12-7	45.00	75.00	75.00	72.00	96
9	**4-Amino-1,2,4-Triazole**						
	Xylene	1330-20-7	2.08	0.69	2.77	2.66	96

11	**TrimethylSulphoxonium Iodide**						
	Dimethyl Sulphoxide	67-68-5	0	28.571	28.57	27.43	96
12	**DimethylFormamideDimethylAcetal**						
	Dimethyl formamide	68-12-2	0	27.95	27.95	26.83	96
13	**Potassium Phthalimide**						
	IPA	67-63-0	0	69.56	69.56	66.78	96
16	**Betahistine**						
	Methanol	67-56-1	0.6	5.7	6.3	6.05	96
17	**Indomethacin**						
	4- Chloro Benzoyl chloride	122-01-0	0.98	9.31	10.29	9.88	96
18	**Ivermectin**						
	Isopropyl Alcohol	67-63-0	2.04	19.38	21.42	20.56	96
19	**Dapoxetine**						
	DMSO	67-68-5	0	109.37	109.37	105.00	96
20	**Doxorubicin**						
	DMSO	67-68-5	0	87.50	87.50	84.00	96
21	**Fusidic Acid**						
	DMF	68-12-2	0	89.36	89.36	85.79	96
22	**Isotretinoin**						
	Methylene Chloride	75-09-2	0	106.70	106.70	103.50	97
23	**Methotrexate**						

	Acetone	67-64-1	0	87.50	87.50	84.00	96
24	**Methylcobalamin**						
	DMSO	67-68-5	0	86.15	86.15	82.70	96
25	**Orlistat**						
	Chloroform	67-66-3	0	107.14	107.14	102.85	96
26	**Sildenafil Citrate**						
	IPA	67-63-0	0	64.28	64.28	61.71	96
27	**Tretinoin**						
	IPA	67-63-0	0	109.37	109.37	105.00	96
28	**Vardenafil**						
	DMF	68-12-2	0	87.50	87.50	84.00	96
29	**Alfacalcidol BP/IP/EP**						
	IPA	67-63-0	0	123.52	123.52	118.58	96
30	**Calcitriol**						
	DMSO	67-68-5	0	151.80	151.80	145.73	96
31	**Methandienone**						
	Acetonitile	75-05-8	0	109.37	109.37	104.99	96
32	**Oxymetholone**						
	DMF	68-12-2	0	140.00	140.00	134.40	96
33	**Drostanolone Propionate**						
	DMF	68-12-2	0	140.0	140.	134.4	96

				0	00	0	
34	**MethenoloneEnanthate**						
	Acetone	67-64-1	0	223.40	223.40	214.46	96
35	**Oxandrolone**						
	Acetone	67-64-1	0	223.40	223.40	214.46	96
36	**Stanozolol**						
	IPA	67-63-0	0	107.14	107.14	102.85	96
37	**TrenboloneEnanthate**						
	DMSO	67-68-5	0	108.24	108.24	103.91	96
38	**BetamethsoneValerate**						
	DMF	68-12-2	0	91.30	91.30	87.65	96
39	**Deflazacort**						
	Acetone	67-64-1	0	136.95	136.95	131.47	96
40	**Fluorometholone**						
	IPA	67-63-0	0	223.40	223.40	214.46	96
41	**Hydrocortisone Acetate**						
	Octanol	111-87-5	0	89.36	89.36	86.68	97
42	**Dutasteride**						
	Ethyline Glycol	107-21-1	0	0.35	0.35	0.34	97
43	**Finasteride**						
	IPA	67-63-0	0	218.75	218.75	210.00	96

44	**Tibolone**						
	DMF	68-12-2	0	175.00	175.00	168.00	96
45	**Progesterone**						
	Acetone	67-64-1	0	109.37	109.37	105.00	96
46	**Dydrogesterone**						
	Acetone	67-64-1	0	108.24	108.24	103.91	96
47	**Mesterolone**						
	IPA	67-63-0	0	107.14	107.14	102.85	96
48	**NorethisteroneEnanthate**						
	Chloroform	67-66-3	0	107.14	107.14	102.85	96
49	**Tadalafil**						
	Dimethyl sulphoxide	67-68-5	0.53	21.53	22.05	21.17	96
50	**Mupirocin**						
	Isopropyl alcohol	67-63-0	0.83	34.17	35	33.60	96
51	**Acarbose**						
	Methanol	67-56-1	0.25	5.75	6.00	5.76	96
	D.M.S.O	67-68-5	0.25	5.75	6.00	5.76	96
54	**Voglibose**						
	D.M.S.O	67-68-5	0.05	11.95	12	11.52	96
55	**Albendazole**						
	N-Propanol (R)	71-23-8	0	56.92	56.92	54.64	96
56	**Fluconazole**						

	Toluene	108-88-3	0	30.00	30.00	28.80	96
	MDC	7722-84-1	0	30.00	30.00	28.80	96
	Ethyl Acetate	141-78-6	0	8.70	8.70	8.44	97
	Acetone	67-64-1	0	7.50	7.50	7.20	96
57	**Pantoprazole Sodium**						
	MDC	75-09-2	0	663.00	663.00	636.48	96
	Acetone	67-64-1	0	24.09	24.09	23.13	96
	Methanol	67-56-1	0	72.85	72.85	69.94	96
	Cyclohexane	110-82-7	0	85.69	85.69	82.26	96
	Ethyl acetate	141-78-6	0	265.33	265.33	257.37	97
	Ethanol	64-17-5	0	49.51	49.51	48.02	97
58	**BoldenoneUndecylenate**						
	Pyridine	110-86-1	0	10.90	10.90	10.46	96
	Dichloromethane	75-09-2	0	54.54	54.54	52.36	96
	Iso-propyl alcohol	67-63-0	0	54.54	54.54	52.90	97
59	**Nandrolonedecanoate**						
	Acetone (Fresh)	67-64-1	0	1.82	1.82	1.75	96
	Pyridine	110-86-1	0	6.66	6.66	6.39	96
	n-Pentane (Fresh)	109-66-0	0	1.15	1.15	1.10	96
	Acetone (Recovered)	67-64-1	0	28.54	28.54	27.40	96
	n-Pentene (Recovered)	109-66-0	0	13.29	13.29	12.76	96
60	**TestosteronEnanthate**						
	Pyridine	110-86-1	0	36.00	36.00	34.56	96
	Chloroform	67-66-3	0	3.60	3.60	3.46	96
	Methanol	67-56-1	0	2.40	2.40	2.30	96
61	**Betamethasone Dipropionate**						
	Pyridine	110-86-1	0	12.90	12.9	12.38	96

					0		
	MDC	7722-84-1	0	31.92	31.92	30.64	96
	Methanol	67-56-1	0	76.80	76.80	73.73	96
62	**Betamethasone Sodium Phosphate**						
	THF	109-99-9	0	48.00	48.00	46.56	97
	Methanol	67-56-1	0	56.00	56.00	53.76	96
	IPA	67-63-0	0	72.00	72.00	69.12	96
63	**Clobetasole Propionate**						
	MDC	7722-84-1	0	61.85	61.85	59.38	96
	DMF	68-12-2	0	43.29	43.29	41.56	96
	Methanol	67-56-1	0	24.74	24.74	23.75	96
64	**Clobetasone Butyrate**						
	DMF	68-12-2	0	66.00	66.00	63.36	96
	MDC	7722-84-1	0	60.00	60.00	57.60	96
	Methanol	67-56-1	0	24.00	24.00	23.04	96
65	**Dexamethasone Sodium Phosphate**						
	THF	109-99-9	0	55.38	55.38	53.71	97
	Methanol	67-56-1	0	62.30	62.30	59.81	96
	IPA	67-63-0	0	73.84	73.84	70.89	96
66	**FluocinoloneAcetonide**						
	Acetone	67-64-1	0	30.00	30.00	28.80	96
	DMF	68-12-2	0	30.00	30.00	28.80	96
68	**Hydrocortisone Hemi Succinate**						
	CHCL3	67-66-3	0	52.20	52.2	50.11	96

					0		
	Pyridine	110-86-1	0	52.20	52.20	50.11	96
	Acetone	67-64-1	0	52.20	52.20	50.11	96
69	**Methyl Prednisolone**						
	Methanol	67-56-1	0	142.56	142.56	136.86	96
	MDC	7722-84-1	0	36.00	36.00	34.56	96
70	**Budesonide**						
	Methanol	67-56-1	0	3.56	3.56	3.42	96
71	**Methyl Prednisolone Hemisuccinate**						
	CHCl3	67-66-3	0	0.87	0.87	0.84	96
	pyridine	110-86-1	0	0.87	0.87	0.84	96
	Acetone	67-64-1	0	0.87	0.87	0.84	96
72	**Triamcinolone Acetonide**						
	Acetone	67-64-1	0	2.00	2.00	1.92	96
	MDC	7722-84-1	0	1.86	1.86	1.79	96
	Methanol	67-56-1	0	0.63	0.63	0.60	96

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

Source:
• Process Reactor
• Raw material Storage & Handling
Mitigation Measures:
• The raw materials will be stored in closed containers and will be handled through closed system to avoid the handling losses
• Reactor and solvent handling pumps will have mechanical seals to prevent leakages. Reactors shall also be provided with breather valve to prevent losses.

G-3	**LDAR proposed:**

Solvent	Source	Mitigation measures
All solvents	Transfer from tanker to storage tank	-Unloading of solvents from Tanker to Storage Tank through appropriate Transferring system. -Closed loop sampling for sampling of Relative materials. -Condenser and scrubber system with proper cooling arrangement -Leak Free Pumps for transfer of solvents

		-MSW Gaskets in solvent pipelines to prevent leakage from flanges -Provide LEL meter/VOC meter
All solvents	Transfer storage tank to day tank	-Ensure proper cleaning of Day tank/reactor and Provide Nitrogen purging for at least 30 minutes before charging any flammable solvents inside the reactor. -Ensure isolation valves near receiver and near Reactor. -Ensure Double earthing to receiver/reactors (Tantalum plug in case of GLR) and bonding continuity on solvent transfer fix lines. -Solvent shall be charged through Deep pipe with vacuum breaker. -Ensure quantity in receiver before charging into reactor. - Check condition of tank, receiver, level indicators, valves, flange joints etc.
All solvents	Transfer day tank to reactor	
All solvents	Solvent recovery plant (Solvent Distillation plant)	-Closed solvent recovery system provided. -Double condenser with chilled brine circulation provided -Sufficient HTA and residence time provided -Mechanical seal and breather valve provided. -Storage tank shall be vented through trap receiver and condenser operated on cooling water

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Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

- All materials will be stored in Drums only.

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

- Drums will be properly labeled.
- Proper ventilation will be provided in storage area.
- Manual handling of chemicals will be avoided.
- Materials will be stored as per its compatibility.
- Drums will be capped properly.

-

- **Applicability of PESO:** will be obtained after environment clearance.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	**Safety measures including Automation**
Bromination	Preventative / Mitigation Measures: Storage & Handling: Protect against physical damage. Store in cool dry area, out of direct sunlight. Separate from combustible, organic or other readily oxidizable materials. Keep above 20F to prevent freezing but avoid heating above atmospheric temperatures as vapor pressure increase could rupture container. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Fire fighting: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool. Following Personal Protective Equipment are to be made compulsory when handling Bromine approved chemical safety goggles at all times when handling Br2. Use a full face shield over eyewear. Full body protection PVC suite Eyewash fountains should be located in areas where bromine is handled, used or stored. When in danger of contact with liquid bromine, wear an approved chemical resistant suit. Leather or other non-woven ANSI approved steel-toed shoes or Gum boot Protective rubber boots should be worn over shoes for extra protection. Have NIOSH approved respirators and self-contained breathing apparatus available. Gloves: 100% Nitrile rubber gloves or Neoprene gloves **Safety Practices in the Work Area** We will inform our all employees of the potential hazards of contact with bromine and train them in appropriate first-aid procedures. Bromine handling areas will be clearly marked and restricted to qualified, trained personnel only. Ventilation We will maintain bromine vapor concentration in the work area to less than 0.1 ppm with adequate exhaust hoods, ventilation systems and scrubbers. Analyze air for proper control.

	Transfer or repackage bromine only in a controlled, closed environment. Exhaust ventilating systems will be used in enclosed areas where bromine is handled.
Ammonolysis	Person handling this process must be trained. They must wear PPEs like vapor mask, apron, splash goggles. Before starting the process, place and equipment must be checked by authorized person. Provide close loop process. Provide double safety valve at reactor where process will be done. Temperature alarm set at high and low point also set pressure alarm at high and low temperature. Adequate windsock provided to know wind direction. Emergency escape root properly marked. Assembly point provided with adequate mark.

H-3	**Details of Fire Load Calculation**

Total Plot Area:	1612.8 m^2
Area utilized for plant activity:	1440 m^2
Area utilized for Hazardous Chemicals Storage:	275 m^2
Number of Floors:	G+3
Water requirement for firefighting in KLD:	103 KLD
Water storage tank provided for firefighting in KLD:	150 KLD
Details of Hydrant Pumps:	1 Nos.
Nearest Fire Station :	GIDC Panoli Fire Station
Applicability of Off Site Emergency Plan:	-

Comments:

- ✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 150 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Shall be obtained after receipt of EC.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	22 Nos.
Number of Contractual person/Labour:	10 Nos.
Area provided for OHC:	25 m^2
Number of First Aid Boxes:	15 Nos.
Nearest General Hospital:	Welcare Hospital, Panoli.
Name of Antidotes to be store in plant:	Will provide

-

Comments

	✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.		

After detailed discussion, it was decided to consider the proposal only after submission of the following documents:

1. Compliance status of existing EC & CTO with summary.
2. Submit details of Green belt (Minimum 33 %) area to be provided.
3. Valid membership certificate of Common Facility
4. Status of FIRE NOC for existing project activities.

5.	SIA/GJ/IND2/51340/2020	**M/s. SML Films Limited** **Plot No: A-17/1, A-17/2, A-10/2, A-16/2 & A-11/2, Sector – A, Ichhapore – Bhatpore GIDC Estate, Vill: Bhatpore, Tal: Choryasi, Dist: Surat – 394 510. State: Gujarat.**	Appraisal

Category of the unit: **5 (d)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.37. Type of application:	EC-Expansion
1.38. Proposal no.	SIA/GJ/IND2/51340/2020
1.39. Category of Project :	5 (d) – B1
1.40. Date of application :	29.04.2021
1.41. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.42. TOR No. & Date :	SIA/GJ/24803/2020 Date: 7 March 2020.
1.43. Technical expert / Environmental Consultant :	M/s. Earthcare Enviro Solutions Pvt. Ltd.
1.44. SEAC Meeting No. and Date:	315th meeting dated 29.11.2021
1.45. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-90711, Date of 25/01/2018 Validity: 07/11/2022. Amendment Consent order no.: AH-113174, Date of 7/6/2021

	validity 7/11/2021. Provisional Consent Amendment order no. AWH-40561 and up to 7/11/2022. Self-compliance report submitted with application.

2) Project proponent has submitted EIA Report prepared by M/s. Earthcare Enviro Solutions Pvt. Ltd. based on the TOR issued by SEIAA.

3) This is an existing unit and now proposed for expansion in manufacturing of Manmade Fabric as mentioned below:

Sr. No.	Name Of Product	Quantity (MT/Month)			End Use
		Existing	Proposed	Total after Expansion	
1.	Bi Axial Oriented polyester Film (BOPET)	8700	8000	**16700**	Packing Material & Making of Jari Products or textile product
2.	Bi-Axially Oriented Poly Propylene Film (BOPP)	-	4500	**4500**	
3.	Metalized BOPET	2000	1000	**3000**	
4.	Metalized BOPP	-	500	**500**	
5.	Polyester chips	-	12000	**12000**	Making of polyester film or yarn

4) The project falls under B1 category of project activity 5(d) as per the schedule of EIA Notification 2006.

5) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.

6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.

7) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

8) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period October-2020 to December-2020. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, CO, O3, Pb, NH3, As, Ni, Benzene, Hg, and Benzo (a) Pyrene (BaP) at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using “AERMOD”. Incremental GLC’s for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

9) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-

Site Emergency Plan has been covered in the RA report.

10) There is no earlier EC. Unit is having Valid CCA of the Board for existing plant. PP submitted CC&A self-compliance report for existing plant. Compliance report found satisfactory. PP submitted that there is no legal court case and public complaint against unit at present.

11) Committee noted that there is a complaint letter received from Paryavaran Mitra vide received by this office dated 07.07.2021. The letter was regarding complaint against damage to the environment and violations. Committee deliberated the contentions of the said letter and upon asking regarding the same, PP informed that site inspection report was carried out by MoEF&CC, RO-Bhopal and they have also received the detailed inspection report. PP represented the site inspection report and Committee noted that:

- ✓ The same complaint was received by the MoEF&CC, RO-Bhopal through MoEF&CC, New Delhi to examine and submit the factual report regarding the present site status and report any civil or construction work has been carried out without prior EC in the proposed expansion site.
- ✓ It is mentioned in the site visit report that "Project authorities presented an overview of the project with details of existing manufacturing facilities available on site. Justification and CCA for the project not falling under the purview of EIA Notification 2006."
- ✓ Report also speaks about the Closure order issued by GPCB and its clarification submitted by PP.
- ✓ As per the report, PP is not manufacturing any polyester chips & readymade PET chips, Silica chips are purchased from market as raw material. The statement of month wise purchase is submitted in reply to GPCB.
- ✓ The PP's intension is clear to have a CP plant for the EC attract products for which TOR has been obtained. In connection with the said expansion, PP is directed to follow the conditions of ToR and submit the project as per direction of SEIAA, Gujarat. Since the matter has been dealt in detailed by the GPCB and the revocation order has been issued by the GPCB, and matter is under preview of GPCB & control for performance of industry and compliance of CCA conditions.
- ✓ M/s. SML Films Limited has Consolidated Consent & Authorization No. AWH-90711 dated 25/01/2018 valid up to 07/11/2022 and provisional consent order no. AWH-40561 valid up to 7/11/2022 for existing products. Unit has also Consent to Establish (NOC-Amendment) for enhancement of existing production capacity, installation new Thermic Fluid Heaters and addition of new plot (Plot No. A-17/2, A-11/2) which is adjacent to the existing plot. Unit has consent for Thermic Fluid Heater No. 5 (6000 U) & Thermic Fluid Heater No. 1 to 4 (Standby) and merging of Plot No. A-11/2 with an existing unit as per the consent order no. AH-113174 Valid up to 07/11/2022.

12) PP also presented as below:

- ✓ Construction activity is done only for non EC products at Plot No.: A-17/2 as per the CTE

Amendment order no.: 110253 Dated: 27/11/2020.

- ✓ CTE Amendment order no.: 110253 Dated: 27/11/2020 is obtained for the non EC product and construction is done only for non EC products. No any construction done for EC attracted product.
- ✓ The two MS Storage tank 1000 KL is being used for fire extinguisher water tank only & shall not use for storage of Glycol.
- ✓ The machines/equipment which are creating misunderstanding are removed from the site & shall not installed at site like Heat Exchanger, REG collection vessels & REF Reaction vessel in future creating any violations.
- ✓ They are not manufacturing any polyester chips & really made PET chips, Silica chips are purchased from as Raw Material. The statement of month wise purchase is submitted.
- ✓ They have not violated EIA Notification by not manufacturing & constructing any EC Attract products.

13) Committee noted that permanent revocation has been given by the GPCB vide letter no.: GPCB/CCA-SRT-1385/ID_30733 / 600841 dated 16.09.2021.

14) Committee noted that

- ✓ This is a zero liquid discharge (ZLD) unit.
- ✓ PP agreed to increase the green belt area within premises and submitted the revised green belt area with 33 % of the total plot area.
- ✓ For existing unit, EC was not applicable for the existing products of the project, and we have obtained NOC & CC&A from GPCB for Existing unit.
- ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.

15) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A-1</td><td colspan="2">Total cost of Proposed Project
(Rs. in Crores):

<table>
<tr><th>Total Project</th></tr>
<tr><td>Rs. 277.51 Crores</td></tr>
</table>

Break-up of proposed project Cost:
<table>
<tr><th>Details</th><th>Project Cost (Rs. In Crores)</th></tr>
<tr><td>Land</td><td>Not Applicable</td></tr>
<tr><td>Building</td><td>Rs. 24.299 Crores</td></tr>
<tr><td>Machinery</td><td>Rs. 234.635 Crores</td></tr>
<tr><td>Env. & Safety</td><td>Rs. 12.885 Crores</td></tr>
</table>
</td></tr>
</table>

Miscellaneous	Rs. 5.691 Crores
Total	**Rs. 277.51 Crores**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Particulars	Detail	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Installation of STP, ETP, MEE, & RO Plant etc.	3.725	0.25
2	Air	Installation of APCMs, Stacks, monitoring platforms on stacks, CEMS etc.	4.21	0.40
3	Hazardous Management	TSDF site membership/NOCs etc.	0.20	0.15
4	Fire & Safety	Pumps, Safety equipment, Hydrant lines, DCS system, fire tender (Foam type and Mini type), etc.	1.55	0.30
6	Green Belt Development	Green belt development	0.05	0.03
7	Occupational Health	Construction of OHC, First Aid Kits, PPE Kit, Hiring of panel doctors, medical examiners and expenses etc.	0.10	0.07
8	Noise Control	Acoustic enclosure for Thermopack, Insulation and Lubrication of pumps, valves, equipments	0.05	0.02
9	CER Funds	CER Activities within study area	2.80	---
10	Miscellaneous	Provision of solar lights, and To conduct EMS efficiency and environmental monitoring and etc.	0.20	0.30
Total			12.885	1.52

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Renovation of health care facility & funds for new equipment

✓ Solar Street lights, Community plantation activity, Solar panels installation, Organic Waste Converters at schools & Village area.

B **Land / Plot ownership details:**

Unit has owned all plots from GIDC. Except Plot No. A/17/2 is on lease agreement.

B-1 **Plot area**

Total Plot area
68022.95 Sq. m.

-

B-2

Area adequacy

Sr. No.	Title		Existing Area (m^2) (Plot No. A-10/2, A-16/2, A-17/1, A-11/2)	Proposed Area (m^2) (Plot No. A-17/2)	After Expansion (m^2) (Plot No. A-10/2, A-16/2, A-17/1, A-11/2, A-17/2)
1.	Finished product Area		2255.40	1037.61	**3,293.01**
2.	Raw material storage area		2471.92	1,804.13	**4,276.05**
3.	Process Area		15,265.95	9,801.55	**25,067.50**
4.	Utility, TFH & Fuel storage Area		4096.07	1586.50	**5682.57**
5.	ETP Area		---	510.50	**510.50**
6.	Hazardous Waste Storage Area		57	269.76	**326.76**
7.	Green Belt Area	Within Premises	4403.90	9376.93	**13780.83**
		At plot no A-16/1 as per agreement with GIDC	8672.40	---	**8672.40**
8.	Office		131.00	---	**131.00**
9.	Open & Other Area		9880.25	8675.85	**18,556.10**
10.	O.H.C		107.00	---	**107.00**
11.	Security area		24	70	**94**
Total Area			47,364.89	33,132.83	**80,497.72**
Total Plot Area			**40,210.45**	**27,812.50**	**68,022.95**

➢ Hence, adequate area is available for proposed new Facility.

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products,

manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 **Green belt area**

	Existing	Proposed	Total (Sq. meter)
Area in Sq. meter	4403.90 inside + 8672.40 Outside	9376.93 inside	13780.83 inside + 8672.40 outside = 22453.23
% of total area	19.22 %	13.78 %	33 %

Comments:

The condition shall be given that -

- ✓ The PP shall develop green belt [13780.83 m2 inside plant premises + 8672.40 m2 at Common Plot in Ankleshwar GIDC= Total: 22453.23 Sq. m.) i.e. 33.3 % of total plot area] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Existing	Proposed	Total
200	200	400

-

D **WATER**

D-1 **Source of Water Supply**

- ➢ Ichchhapore GIDC Water supply.

Comments:

- ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

CATEGORY	EXISTING (KL/Day)	PROPOSED (KL/Day)	TOTAL AFTER EXPANSION (KL/Day)

Domestic	22	15	**37**
Gardening	25	40	**65**
Total (a)	**47**	**55**	**102**
(b) Industrial:			
Process	--	--	**--**
Cooling Tower (Make-up)*	225.0	390.0	**615.0**
Washing	--	5.0	**5.0**
Water scrubber	--	45.0	**45.0**
Total (b)	**225.0**	**440.0**	**665.0**
Total (a + b)	**272.0**	**495.0**	**767.0**

-

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

CATEGORY	EXISTING (KL/Day)	PROPOSED (KL/Day)	TOTAL AFTER EXPANSION (KL/Day)
Domestic	**17.0**	**12.0**	**29.0**
Total (a)	**17.0**	**12.0**	**29.0**
(b) Industrial			
Process	--	75.0	75.0
Cooling tower (make-up)*	60.0	104.0	164.0
Water scrubber	--	12.0	12.00
Washing	--	4.50	4.50
Total (b)	**60.0**	**195.50**	**255.50**
Total (a + b)	**77.0**	**207.50**	**284.50**

-

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4 Break-up of waste water disposal & facility (For Domestic)

29 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.

Comments:

- ✓ Domestic wastewater generation shall not exceed 29 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
- ✓ Unit shall provide STP with adequate capacity.

D-5	Break-up of waste water disposal & facility (For Industrial)

Sr. no.	Quantity	Facility
1	75 KLD	Treated into ETP-1 (primary, secondary, MBR)
2	180.50 KLD	Treated into ETP-2 (primary, ultra filtration) RO, MEE Plant
Total	255.50 KLD	

Comments:

1. Industrial effluent shall be segregated into two streams (1) Stream-1 (process) (2) Stream-2 shall be treated as below.
   - ✓ **Stream - 1 (75 KLD)**
     - ➢ 75 KLD, Concentrated stream collected, neutralized, primary & secondary treatment and treated water shall be reused within premises for industrial purpose.
   - ✓ **Stream - 2 (180.50 KLD):**
     - ➢ 180.50 KLD industrial effluent generated from scrubber, washing, and Cooling tower shall be neutralized, primary & tertiary treatment and RO. RO Permeate shall be reused for industrial purpose within premises and RO reject shall be evaporated into MEE.
     - ➢ Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.
2. Unit shall provide STP and ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	AIR

E-1	Power (Electricity) requirement : 12 KW
E-2	**Flue gas emission details**

-

Stack Attached To			Fuel Consumption			Stack Height	Details of APCM			Final Concentration
Existing	**Proposed**	**After Expansion**	**Existing**	**Proposed**	**After Expansion**		**Existing**	**Proposed**	**After Expansion**	
Thermic Fluid Heater - 1 (capacity 2500 U) **(Stand by)**	---	**Thermic Fluid Heater - 1 (capacity 2500 U) (Stand by)**	L.D.O. - 3.4 KL/day or Natural Gas – 12000 SCM/day	---	**L.D.O. - 3.4 KL/day or Natural Gas – 12000 SCM/day**	Common Stack **No.1** 40 Mts	As per Adequate Stack Height	---	**As per Adequate Stack Height**	SPM SO_2 Nox
Thermic Fluid Heater - 2 (capacity 2500 U) **(Stand by)**	---	**Thermic Fluid Heater - 2 (capacity 2500 U) (Stand by)**	L.D.O - 3.4 KL/day or Natural Gas – 12000 SCM/day	---	**L.D.O - 3.4 KL/day or Natural Gas – 12000 SCM/day**		As per Adequate Stack Height	---	**As per Adequate Stack Height**	SPM SO_2 Nox
Thermic Fluid Heater – 3 (capacity 2500 U) **(Stand by)**	---	**Thermic Fluid Heater – 3 (capacity 2500 U) (Stand by)**	L.D.O - 3.4 KL/day or Natural Gas – 12000 SCM/day	---	**L.D.O - 3.4 KL/day or Natural Gas – 12000 SCM/day**	Common Stack **No.2** 40 Mts	As per Adequate Stack Height	---	**As per Adequate Stack Height**	SPM SO_2 Nox
Thermic Fluid Heater - 4 (capacity	---	**Thermic Fluid Heater - 4 (capacity**	L.D.O - 3.4 KL/day or Natural	---	**L.D.O - 3.4 KL/day or Natural Gas –**		As per Adequate Stack Heig	---	**As per Adequate Stack Height**	SPM SO_2 Nox

2500 U) **(Stand-by)**		**2500 U) (Stand-by)**	Gas – 12000 SCM/day		**12000 SCM/day**		ht			
Thermic Fluid Heater - 5 (capacity 6000 U)	---	**Thermic Fluid Heater -5 (capacity 6000 U)**	Imported Coal – 40 MT/Day	---	**Imported Coal – 40 MT/Day**	Stack **No .3** 40 Mts	MDC, water Scrubber & ESP	---	**MDC, water Scrubber & ESP**	SPM SO_2 Nox
---	Thermic Fluid Heater - 6 (capacity 8000 U)	**Thermic Fluid Heater - 6 (capacity 8000 U)**	---	Imported Coal – 45 MT/ Day	**Imported Coal – 45 MT/Day**	Common Stack **No .4** 40 Mts	---	MDC, water Scrubber & ESP	**MDC, water Scrubber & ESP**	SPM SO_2 Nox
---	Thermic Fluid Heater – 7 (capacity 8000 U)	**Thermic Fluid Heater – 7 (capacity 8000 U)**	---	Imported Coal – 45 MT/ Day	**Imported Coal – 45 MT/Day**		---	MDC, water Scrubber & ESP	**MDC, water Scrubber & ESP**	SPM SO_2 Nox
---	Thermic Fluid Heater - 8 (capacity 8000 U)	**Thermic Fluid Heater - 8 (capacity 8000 U)**	---	Imported Coal – 45 MT/ Day	**Imported Coal – 45 MT/Day**		---	MDC, water Scrubber & ESP	**MDC, water Scrubber & ESP**	SPM SO_2 Nox

-

E-3	**Process gas**

-

Sr. No	**Specific Source of emission (Name of the Product & Process)**	**Type of Emission**	**Stack/Vent Height (meter)**	**Air Pollution Control Measures (APCM)**
No process emission will be generated from manufacturing process.				

-

E-4	**Fugitive emission** details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents/fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

-

Sr. No.	Waste	Source	Schedule-I	Quantity			Facility
				Existing	Proposed	Total After Expansion	
1	Used Oil	Thermo pack	Sch-I 5.1	1 KL/Year	1 KL/Year	**2 KL/Year**	Collection, Storage, Transportation, Disposal by selling to Registered Re-refiners, approved by GPCB/CPCB or reused as lubricant for machinery within the factory.
2	ETP Sludge	ETP	Sch-I 35.3	---	365 T/Year	**365 T/year**	Collection, Storage, Transportation, Disposal at TSDF site approved by GPCB.
3	Discarded Container/bags	Raw Material	Sch-I 33.1	3 T/Year	10 T/Year	**13 T/Year**	Collection, Storage, Transportation, Disposal by selling to Registered facility

	& Liners						approved by GPCB.
4	MEE salt	MEE	Sch -I 35. 3	---	219 T/Year	**219 T/Year**	Collection, Storage, Transportation, Disposal at TSDF approved by GPCB.

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 600 MTPA.
- ✓ STP sludge generation will be 1900 MTPA

Comments:

- ✓ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
- ✓ STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Manufacturing process of polyester chips is a continue process and MEG will be generated from the process. 97 – 98 % MEG will be recovered. It will be reused again same process.

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement.
- The condenser will be provided with sufficient HTA and residence time to achieve more than 97 % recovery.
- VOC detectors will be installed at various places to identify any fugitive emissions.

- Minimum number of flanges, joints and valves in pipelines shall be provided.

-

G-3	LDAR proposed:

Leak Definition

- A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation.
- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval.
- Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell.

Following steps shall be followed for effective implementation of LDAR Program:

- Process Controls
- Emissions control program
- Selection of appropriate method for leak detection
- Scheduling and checklist for Leak Detection
- Methods for rectification of identified leaks
- Frequency of Monitoring
- Record keeping of LDAR Program

-

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals

-

- **Applicability of PESO:** Not Applicable. MEG is not covered as hazardous petroleum item.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	Types of hazardous Processes involved and its safety measures:

Type of Process	Safety measures including Automation
Esterification and Polymerisation Process	➢ Proper earthing connected at all over production area. Fire hydrant system provided. ➢ Cooling and chilling adequate Cooling water circulation in Jacket of the reaction Vessel. ➢ DCS system will be provided. ➢ Pressure safety valve system provided. ➢ Use skilled worker ➢ Proper selection of MOC. ➢ Mechanical seal in all pumps and reactors.

H-3 Details of Fire Load Calculation

Total Plot Area:	68022.95 m^2
Area utilized for plant activity:	25,067.50 m^2
Area utilized for Hazardous Chemicals Storage:	4,276.05 m2
Number of Floors:	G+4 Floors in production Building
Water requirement for firefighting in KLD:	1000 KL
Water storage tank provided for firefighting in KLD:	2000 KL
Details of Hydrant Pumps:	Fire hydrant pump will be provided & others in standby.
Nearest Fire Station :	Ichhapore GIDC
Applicability of Off Site Emergency Plan:	Applicable

Comments:

✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 2000 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

For existing plant, unit obtained Fire NOC as per order no. FES/OUTWARD/NOC/1501. For the proposed, Unit will be provided after getting EC before getting CCA.

H-5 Details of Occupational Health Centre (OHC):

-

Number of permanent Employee:	200
Number of Contractual person/Labour:	50
Area provided for OHC:	107 m^2
Number of First Aid Boxes:	50 nos
Nearest General Hospital:	Life Care
Name of Antidotes to be store in plant:	Alcohol and charcoal type of antidote will be provided and will be kept at each location as per requirement. We will also try to co-ordinate to the nearest hospital so that it can be used immediately in case of any emergency.

-

Comments

✓ Project proponent has provided Occupational health center with adequate

provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

16) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.
b) "No uncovered vehicles carrying construction material and waste shall be permitted."
c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."
d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).
e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.
f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.
g) Grinding and cutting of building materials in open area shall be prohibited.
h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB

guidelines. LDAR Logbooks shall be maintained.

3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.
7. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
    c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
    d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
    e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
    f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
    g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
    h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
    i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
    j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
    k) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.
    l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

8. Total water requirement for the project shall not exceed 767 KLD. Unit shall recycle 264 KLD treated water, RO Permeate, and MEE condensate water in industrial purpose. Hence, fresh water requirement shall not exceed 503 KLD and it shall be met through GIDC supply only. Prior permission from

concerned authority shall be obtained for withdrawal of water.

9. The industrial effluent generation from the project shall not exceed 255.50 KLD after expansion.
10. Management of industrial waste water shall be as under:
    - Industrial effluent from process shall be treated in ETP consist of primary and secondary ETP units and then treated effluent shall be reused into industrial purpose.
    - Industrial effluent from washing, Cooling Tower and scrubber shall be treated in ETP consist of primary and tertiary unit and then treated effluent shall be send to RO. RO permeate shall be reused for industrial purpose within premises and RO reject shall be evaporated into MEE.
    - Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.
11. Domestic wastewater generation shall not exceed 29 KL/Day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
12. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
13. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

14. Unit shall not exceed fuel consumption for Thermic Fluid Heaters as per the point no. E-2 as mentioned above.
15. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
16. PP shall use approved fuels only as fuel in Thermic Fluid Heaters.
17. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
18. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
19. For control of fugitive emission, VOCs, following steps shall be followed :

- ✓ Closed handling and charging system shall be provided for chemicals.
- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals to prevent leakages.
- ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

20. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
21. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

22. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
23. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
24. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
25. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
26. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

27. The PP shall develop green **belt 9376.93 m^2 (13.78%) inside plant premises for the proposed**. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

28. The project proponent shall carry out the activities (Solar Street lights, Community plantation activity, Solar panels installation, Organic Waste Converters at schools & Village area) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
29. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Earthcare Enviro Solutions Pvt. Ltd. and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

30. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
31. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
32. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
33. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
34. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
35. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
36. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

6.	SIA/GJ/ IND2/63021/2020	**M/s. Colochem Industries,** Plot No.: C-1, B-7002, GIDC Estate, Ankleshwar, Dist- Bharuch, Gujarat	Appraisal

Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/ IND2/63021/2020
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	27.09.2021
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	IA-J-11011/440/2019-IA-II(I), Dated: 24.02.2020
1.7. Technical expert / Environmental Consultant :	M/s. Jyoti Om Chemical Research Centre Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	315th meeting, Date: 29.11.2021
1.9. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-95212, Date of issue: 06/08/2018 Validity: 30/04/2023 Self-compliance report submitted with application.

2) Project proponent has submitted EIA Report prepared by M/s. Jyoti Om Chemical Research Centre Pvt. Ltd based on the TOR issued by SEIAA.

3) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Sr. No	**Name of the Products**	**CAS No./CI No.**	**Quantity MT/Month**			**End-use of the products**
			Existing	**Proposed**	**Total**	
REACTIVE DYES				43.85 MT/Month Either Or	50 MT/Month Either Or	Dyeing & printing cotton
Representative Products						
1.	Ramazole Black	20505	0.75			
2.	Ramazole Yellow MG	Y.42	0.80			

3.	Ramazole Orange 3R	17757	0.50			
4.	Ramazole Orange 2R	17756	0.30			
5.	Ramazole Golden Yellow R	18820	0.20			
6.	Ramazole Red-C2G	R.106	0.60			
7.	Reactive blue ME2RL	yellow 145a	0			
8.	Reactive yellow ME4GL	Yellow 186	0			
9.	Reactive orange H2R	18270	0			
10.	Reactive red ME6BL	Red 250	0			
AZO- PIGMENTS						Paints, printing inc, plastic coloring
Representative Products						
11.	Pigment Red -2	12310	0			
12.	Pigment Red- 3	12120	0			
13.	Pigment Red- 4	12085	0			
14.	Pigment Red- 8	12335	1			
15.	Pigment Red- 12	12385	0			
16.	Pigment Red-31	12360	0			
17.	Pigment Red-32	12320	0			
18.	Pigment Red-48	15865	0			
19.	Pigment Red-53	15585	0			
20.	Pigment Red- 57	15850	0			
21.	Pigment Red -112	12370	0			
22.	Pigment Red- 210	12477	0			
23.	Pigment Yellow-1	11680	0			
24.	Pigment Yellow-3	11710	0			
25.	Pigment Yellow-12	21090	1			
26.	Pigment Yellow-17	21105	0			
27.	Pigment Yellow-13	21100	0			
28.	Pigment Yellow-74	11741	0			
29.	Pigment Yellow-83	21108	0			
30.	Pigment Orange-5	12075	0			
31.	Pigment Orange-13	21100	1			
32.	Pigment Orange-34	21115	0			
DISPERSE DYES (AZO GROUP)						Dyeing and printing polyester fabrics
Representative Products						
33.	Disperse navy blue 3G (IGNS)	11344	0			
34.	Disperse golden yellow GG	47020	0			
35.	Disperse rubine 3B	11215	0			
36.	Disperse rubine GFL	11116	0			
37.	Disperse rubine 5B	CAS no. 99035-78-6	0			
38.	Disperse scarlet RR	11131	0			
39.	Disperse yellow brown REL	111355	0			
40.	Disperse orange	11227	0			

	ERL (Disperse Orange 25)					
41.	Disperse violet B	61102	0			
42.	Disperse blue SE2R1	61104	0			
43.	Disperse yellow 7 GL	11855	0			
44.	Disperse rubine S2GL	11116	0			
45.	Disperse orange 288	Orange-288	0			
46.	Disperse scarlet 3R (Disperse Red 50)	11226	0			
47.	Disperse brown 3REL	Red-118	0			
48.	Disperse golden yellow 2GD	216550	0			
49.	Disperse yellow 119	Yellow-119	0			
50.	Disperse yellow 241	128450	0			
51.	Disperse yellow 211	12755	0			
52.	Disperse blue 291	113395	0			
53.	Disperse violet 93	Violet -93	0			
54.	Disperse yellow 5RX	26090	0			
55.	Disperse yellow M7G	12700	0			
56.	Disperse red 9	60505	0			
57.	Disperse red 1	11110	0			
58.	Disperse red 13	11115	0			
59.	Disperse red 17	11210	0			
60.	Disperse yellow 3 (Disperse yellow G)	11855	0			
61.	Disperse blue FFR	61505	0			
62.	Disperse blue BN	Blue-60	0			
63.	Disperse red 11	62015	0			
64.	Disperse blue 60	61104	0			
65.	Disperse violet 26	62025	0			
MISCELLANEOUS TYPE						
Representative Product						
66.	Disperse Yellow 184	551640	0			
67.	Disperse Blue 354	48480	0			
ACID DYES						Wool 7 nylon
Representative Product						
68.	Metanil Yellow	13065	0			
69.	Acid Orange-II	15510	0			
70.	Fast Red A	60760	0			
BASIC DYES						Paper acrylics
Representative Product						
71.	Basic Bismark Brown-1	21000	0			
72.	Basic Crysoline	--	0			
SOLVENT DYES						Print &

Representative Product						hydrocarbon solvent
73.	Black- 27	12195	0			
74.	Red -23	26100	0			
75.	Orange -7	12140	0			
76.	Yellow-18	12740	0			
DYES INTERMEDIATES Pigment Paste & Micro Fine Ink				26.2 MT/Month Either Or	30 MT/Month Either Or	Dispersed dye mfg
Representative Product						
77.	Dispersing Agent-045 (Phenol Based)	--	2			
78.	Naphthalene based	--	0			
79.	N N Di Ethyl Meta Amino Acetanilide	6375-46-8	0.25			
80.	1 Phenyl, 3 Methyl, 5 Pyrazolone	89-25-8	0.55			
81.	2-Ethyl Pyridine	100-71-0	0			
82.	2-Methyl Pyridine	109-06-8	0			
83.	2-Butyl Pyridine	5058-19-5	0			
84.	N- Cyano Ethyl N-Ethyl Aniine	148-87-8	1			
	Total		9.95	70.05	80	

4) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
5) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
7) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
8) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March-2018 to May-2018. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, and NOx at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using “AERMOD”. Incremental GLC’s for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).
9) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
10) Committee noted the following

- Generated effluent shall be treated in unit's own ETP.
- Unit shall continue 2.5 KLD effluent discharge into M/s. ETL as per existing consent.
- Additional 8.4 KLD shall be sent to CMEE BEIL. Membership certificate is obtained.
- Domestic effluent shall be treated along with industrial effluent.
- Natural gas or Briquette shall be used as fuel in Boiler/ HAG/TFH.

11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no. | **Particulars** | **Details**

A-1 Total **cost of Proposed** Project (Rs. in Crores):

Existing	Proposed	Total
0.65 Crores	1 Crores	1.65 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	Not Applicable
Building	Rs. 0.30 Crores
Machinery	Rs. 0.20 Crores
Env. & Safety	Rs. 0.43 Crores
Miscellaneous	Rs. 0.07 Crores
Total	**Rs. 1.0 Crores**

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A-2 **Details of Environmental Management Plan (EMP)** As below:

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Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Operating Cost (Rs. In Crores)	Maintenance Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	ETP, ETL, CMEE	0.07	0.75	0.001	0.751
2	Air	Bag filter, Water scrubber, Stack	0.03	0.0042	0.001	0.0052
3	Hazardous Management	HWSA, Membership Of TSDF and Co-processing of Hazardous Waste	0.04	0.5	0	0.5
4	Fire & Safety	Fire Extinguisher, Smoke detector, Fire hydrant	0.15	0.015	0.001	0.016
	DCS / Automation system	Automation for Acid Handling	0.10	0.001	0.01	0.011
5	Green Belt Development	Plants, Tree Guard, Manure Inside and outside green belt	0.01	0.00025	0	0.00025

		development				
6	Occupational Health	First Aid Kit, Medical equipment	0.02	0.0001	0.001	0.0011
7	Noise Control	Installation of noise control devices, PPEs for noise mitigation	0.01	0.0001	0.01	0.0101
8	CER Funds	Solar panel installation at PHC of Kosamdi village	0.0075	0.0025	0	0.0025
Total			**0.4375**	**1.27315**	**0.024**	**1.29715**

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Solar panel installation at PHC of Kosamdi Grampanchayat
- ✓

B	**Land / Plot ownership details:** Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/ANK/DM/18355, Dated: 16/11/88

B-1	**Plot area**

Total Plot area
703.95 Sq. m.

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B-2

Area adequacy

Sr. No.	**Building Name**	**Total Area Sq.m**
1	Green belt	76
2	Utility	42.90
3	ETP	31.10
4	Solvent Storage	30
5	Plant Building	110
6	Storage area for Raw material and Product	68.46
7	U.G Water tank	22.93
8	OHC	15
8	Security Cabin	15
9	Road Area	292.61
Total		**703.80**

		➢ Hence, adequate area is available for proposed new Facility. **Comments:** SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.
B-3	**Green belt area**	

	Existing	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	76 (Inside Plant Premises)	160 (Out Side Plant Premises)	236
% of total area	11 %	23 %	34 %

Comments:

The condition shall be given that -

✓ The PP shall develop green **belt [76 m2 (11%) inside plant premises + 160 m2 (23%)** at Common Plot in Ankleshwar GIDC**= Total: 236 Sq. m.) i.e. 34 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C	**Employment generation**

Existing	Proposed	Total
6	10	16

D	**WATER**
D-1	**Source of Water Supply** ➢ Ankleshwar GIDC Water supply. Letter No.: NTA/ANK/DEE(WS)/419, Dated: 17/03/2020
	Comments: ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	**Existing** KLD	**Proposed (Additional)** KLD	**Total after Expansion** KLD
(J) Domestic	1.25	1.75	3
(K) Gardening	0.0	2	2
(L) Industrial			
Process	1.1	6.9	8
Washing	0.1	2.4	2.5
Boiler	0.1	4.9	5
Cooling	0.0	1	1
Industrial Total	**1.3**	**15.2**	**16.5**
Grand Total (A+B+C)	**2.55**	**18.95**	**21.5**

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

Category	**Waste water KLD**	**Proposed (Additional)** KLD	**Total after Expansion** KLD
(G) Domestic	1.25	0.75	2
(H) Industrial			
Process	1.05	5.35	6.4
Washing	0.1	2.4	2.5
Boiler	0.1	0.4	0.5
Cooling	0	0.1	0.1
Total Industrial waste water	**1.25**	**8.25**	**9.5**
Total [A + B]	**2.5**	**9**	**11.5**

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4 Break-up of waste water disposal & facility (For Domestic)

2 KLD domestic effluent shall be treated along with industrial effluent.

Comments:

- ✓ Domestic wastewater generation shall not exceed 2 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	Quantity KLD	Facility
1	2.5 KLD	To M/s. ETL.
2	6.4 KLD	To CMEE of M/s. BEIL
3	0.6 KLD	Cooling tower blow down and boiler blow down reuse in washing
Total	**9.5**	

Comments:

4. Industrial effluent will be segregated into two streams (1) Concentrated (2) Dilute stream shall be treated as below.
   - ✓ **Concentrated Stream (3.6 KLD)**
     - ➢ 3.6 KLD high concentrated effluent from process will collected in primary ETP. After neutralization it will be send to CMEE of M/s. BEIL.
   - ✓ **Dilute Stream (5.9 KLD):**
     - ➢ 0.6 KLD effluent from cooling tower blow-down and boiler blow-down shall be directly reused in washing.
     - ➢ 2.5 KLD effluent shall be sent to M/s. ETL.
     - ➢ Remaining 2.8 KLD shall be collected and sent to CMEE of M/s. BEIL.
5. Unit shall provide ETP with adequate capacity.
6. 2 KLD domestic effluent shall also be treated along with industrial effluent.

E	**AIR**
E-1	Power (Electricity) requirement : 250 KVA
E-2	**Flue gas emission details**

-

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/ Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing Flue Gas Emission as per CCA						
1.	Steam Boiler-1 (400 kg/Hr)	12	Natural Gas	1600 Nm3/Day	PM SO_2 NOx	Adequate stack Height
2.	Hot air generator –I (400 Kcal/Hr)	12	Natural Gas	1600 Nm3/Day	PM SO_2 NOx	Adequate stack Height
3.	Hot air generator –II (1LacKCAl/ Hr)					
After proposed Expansion						
1	Hot air generator –I (1 Lac KCal/Hr)	30	Natural Gas OR Briquets	1900 Nm3/Day OR 5 MT/Day	PM SO2 NOx	Adequate stack Height and bag filter
2	Hot air generator –II (1 Lac KCal/Hr)		Natural Gas OR Briquets	1900 Nm3/Day OR 5 MT/Day		
3	Thermic Flue Heater (2 Lac Kcal/Hr)	30	Natural Gas OR Briquets	1900 Nm3/Day OR 5 MT/Day	PM SO2 NOx	Adequate stack Height MCS, water scrubber
4	Steam Boiler-2 (2 TPH)-Natural Gas base **OR** Steam Boiler-2 (2 TPH)-Briquette base		Natural Gas OR Briquets	1900 Nm3/Day OR 5 MT/Day		
5	D. G. Set (75 KVA)		Diesel	Diesel- 600 lit/day	PM SO2 NOx	Acoustic enclosure

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E-3	**Process gas**

-

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Existing Flue Gas Emission as per CCA				

1	Spray Dryer	PM	11	Bag Filter
Total After Proposed Flue Gas Emission				
1	Spray Dryer	PM	11	Bag Filter

-There will be no change in proposed condition

E-4	**Fugitive emission** details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

-

Sr. no.	**Type/Name of Hazardous waste**	**Specific Source of generation (Name of the Activity, Product etc.)**	**Category and Schedule as per HW Rules.**	**Quantity (MT/Annum)**			**Management of HW**
				Existing	**Proposed**	**Total**	
1	Discarded containers	Transportation	33.3	30	15	45	Collection, Storage, transportation and send to authorized recycler after Decontamination

2	ETP Sludge	ETP	35.1	0	2.8	2.8	Collection, Storage, transportation and disposed at TSDF site.
3	Used/ Spent Oil	Maintenance	5.3	0	100	100	Collection, Storage, transportation and send to authorized recycler.
4	Spent carbon	Solvent Recovery	28.3	0	3	3	Collection, Storage, transportation and disposed by co-processing
5	Process waste Sludge / residue	Manufacturing process	26.1	0	90	90	Collection, Storage, transportation and disposed by co-processing
6	Spent Solvent	Solvent Recovery	26.4	0	4	4	Collection, Storage, transportation and disposed by co-processing
7	Recovered Solvent	Solvent Recovery	26.4	0	92	92	Collection, Storage, transportation, given to Rule 9 approved Unit for distillation or Distilled within Premises and reuse within premises.

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 180 MTPA

Comments:

- ✓ Management of fly ash will be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

Sr. No.	Name of Solvent	Total Quantity MT/month	Recovery	% of Recovery	% Loss in Air	% Loss in Water	% Loss in Haz
1	Methanol	5	4.8	96	0.01	0.1	0.09
2	Formaldehyde	2	1.9	96	0.1	0	0
3	DMF	1	0.97	97	0.01	0.01	0.01

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement.
- The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

-

G-3	**LDAR proposed:**

Leak Definition

- A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation.
- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval.
- Many equipment leak regulations also define a leak based on visual inspections

and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell.

Following steps shall be followed for effective implementation of LDAR Program:

- Process Controls
- Emissions control program
- Selection of appropriate method for leak detection
- Scheduling and checklist for Leak Detection
- Methods for rectification of identified leaks
- Frequency of Monitoring
- Record keeping of LDAR Program

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

-

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Storage details	Name of major Hazardous chemicals	Remarks
Drum/Barrel storage	Methanol	1 Ton
	Formaldehyde	1 Ton
	DMF	1 Ton

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	**Safety measures**
FLAMMABLE & EXPLOSIVE	Storage in compatible storage unit with flame proof fitting, also provide firefighting measures. Only trained person allowed to handle
CORROSIVE & CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle
TOXIC CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals after getting CCA.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

There is no any hazardous process involved for product manufacturing.

H-3	**Details of Fire Load Calculation**

Total Plot Area:	703.95
Area utilized for plant activity:	335.39
Area utilized for Hazardous Chemicals Storage:	30
Number of Floors:	3
Water requirement for firefighting in KLD:	2
Water storage tank provided for firefighting in KLD:	150
Details of Hydrant Pumps:	Main Pump- 75 HP, D.G. Pump- 65 HP
Nearest Fire Station :	3.39 Km
Applicability of Off Site Emergency Plan:	Not applicable

Comments:

- ✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 150 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Shall be obtained after receipt of EC.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	10 Nos.
Number of Contractual person/Labour:	6 Nos.
Area provided for OHC:	15 Sq.m
Number of First Aid Boxes:	2 Nos.
Nearest General Hospital:	Jayabn Modi hospital - 3.52 Km

Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises

-

Comments

- ✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

12) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement will also be

done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**

2. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery will be maximum and recovered solvent shall be reused in the process within premises.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
    c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
    d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
    e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
    f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
    g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
    h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
    i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
    j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
    k) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent

storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 21.5 KLD. Unit shall recycle 0.6 KLD water, Hence, fresh water requirement shall not exceed 20.9 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
10. The industrial effluent generation from the project shall not exceed 9.5 KLD after expansion.
11. Management of industrial waste water will be as under:
    - Total industrial effluent generation 9.5 KLD.
    - As per existing CCA, 2.5 KLD low concentrated industrial effluent will treated in primary ETP and shall be sent to M/s. ETL.
    - 0.6 KLD from boiler blow down and cooling tower blow down shall be reused in washing.
    - Remaining, effluent 6.4 KLD shall be sent to CMEE of M/s. BEIL.
    - 2 KLD Domestic effluent shall also be treated along with industrial effluent.
    - Unit shall discharge 2.5 KLD effluent into M/s. ETL and 8.4 KLD shall be sent to CMEE of M/s. BEIL.
12. Domestic wastewater generation will not exceed 2 KL/Day for proposed project and it will be treated in ETP. It will not be disposed off through soak pit/ septic tank. Unit will provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
14. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

15. Unit shall not exceed fuel consumption for Boiler, HAG,TFH and D G Set as per the point no. E-2 as mentioned above.
16. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
17. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
18. PP shall use approved fuels only as fuel in boilers/HAG/TFH.
19. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.

- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
21. For control of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
22. Solvent management will be carried out as follows:
    - ✓ Measures will be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor will be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump will have mechanical seals to prevent leakages.
    - ✓ The condensers will be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents will be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area will be flame proof. The solvent storage tanks will be provided with breather valve to prevent losses.
23. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx & VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

24. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
25. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
26. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

27. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
28. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

29. The PP shall develop green belt within and outside of plant premises (236 Sq. m i.e. 34 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

30. The project proponent shall carry out the activities (solar panel distribution at PHC of kosamdi village) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
31. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Jyoti Om Chemical Research Centre Pvt. Ltd. and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

32. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
33. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
34. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
35. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
36. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
37. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days

from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.

38. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

7.	SIA/GJ/IND2/65810/2021	**M/s. F. I. DYE CHEM** Plot No.: 3421, GIDC Chhatral, Tehsil: Kalol, Distict: Gandhinagar, Gujarat – 382729.	Appraisal

Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.10. Type of application:	EC-New
1.11. Proposal no.	SIA/GJ/IND2/65810/2021
1.12. Category of Project :	5 (f) – B1
1.13. Date of application :	05.10.2021
1.14. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.15. TOR No. & Date :	SIA/GJ/77004/2021, 03.04.2021
1.16. Technical expert / Environmental Consultant :	M/s. ECOGREEN ENVIRO SERVICES
1.17. SEAC Meeting No. and Date:	315th meeting, 29.11.2021
1.18. Compliance of Existing EC & CCA	Not applicable. Greenfield Project.

2) Project proponent has submitted EIA Report prepared by M/s. ECOGREEN ENVIRO SERVICES based on the TOR issued by SEIAA.

3) This is new unit proposed manufacturing of synthetic organic chemicals as mentioned below:

Grp. No	S.N.	Name of Product	CAS No.	Qty. (MT/Month)	End Use of Products
Disperse Dyes					
A	1	Disperse Blue 79	12239-34-8	50	Coloring of Polyester fabrics / Mix
	2	Disperse Orange-30	12223-23-3		
	3	Disperse Red 118	52623-75-3		
	4	Disperse Eco Blue 291:1	56548-64-2		
	5	Disperse Violet 63	64294-88-8		
	6	Disperse Violet 33	12236-25-8		

	7	Disperse Violet 96	52697-38-8			
	8	Disperse Red 73	16889-10-4			
	9	Disperse Red 152	78564-86-0			
	10	Disperse Red 153	78564-87-1			
	11	Disperse Orange 29	19800-42-1			
	12	Disperse Blue 183:1	2309-94-6			
	13	Disperse Blue 291	56548-64-2			
	14	Disperse Orange 61	12270-45-0			
	15	Disperse Black 9	20721-50-0			
	16	Disperse Brown 1	12236-00-9			
	17	Disperse Brown 4	12223-16-4			
	18	Disperse Blue 165	41642-51-7			
	19	Disperse Blue 79:1	12239-34-8			
	20	Disperse Red 167	79300-13-3			
	21	Disperse Red 54	12217-86-6			
	22	Disperse Red 74	61703-11-5			
	23	Disperse Yellow 211	70528-90-4			
	24	Disperse Yellow 119	57308-41-5			
	25	Disperse Orange 25	31482-56-1			
	26	Disperse Orange 44	12223-26-6			
	27	Disperse Red 202	3089-17-6			
	28	Disperse Orange 288	96662-24-7			
	29	Disperse Yellow 79	86836-02-4			
	30	Disperse Red 50	12223-35-7			
	31	Disperse Yellow 114	61968-66-9			
	32	Disperse Yellow 126	61968-70-5			
	33	Disperse Yellow SGL	70528-90-4			
	34	Disperse Yellow 241	83429-52-9			
	35	Disperse Orange 73	79300-11-1			
	36	Disperse Rubine 5B	16889-10-4			
	37	Disperse Orange3	730-40-5			
	38	Disperse Yellow 3	2832-40-8			
	39	Disperse Red 13	3180-81-8			
	40	Disperse Orange 31	61968-38-5			
	41	Disperse Red 1	2872-52-8			
	42	Blue GSL	41642-51-7			
	43	Blue 165:1	86836-00-2			
	44	Blue 366	84870-65-5			
	45	Red 343	99031-78-6			
	46	Yellow 184:1	164578-37-4			
	47	Yellow 82	12239-58-6			
	48	Yellow 242	152442-18-0			
	49	Disperse Brown 19	71872-49-6			
	50	Disperse Red 311	77907-28-9			
	51	Disperse Red 60	17418-58-5			

	52	Disperse Violet 26	12217-95-7		
	53	Blue SR 354	104137-27-1		
	54	Red 167:1 (Dark Red 2B)	79300-l3-3		
	55	Red 6B (Red 69)	12221-69-1		
	56	Yellow M7G Mix	2832-40-8		
	57	Black R Liquid	6428-31-5		
	58	Black R Plus	12239-92-9		
	59	Black Rx	7732-18-5		
	60	Green 6B	71627-50-9		
	61	Disperse Red 277	70294-19-8		
	62	Disperse Red 91	12236-10-1		
	63	Disperse Red 364	522-75-8		
	64	Disperse Red 374	52372-36-8		
	65	Disperse Yellow 64	10319-14-9		
	66	Disperse Yellow 6GS 79	12236-36-1		
	67	Disperse Yellow C4G 79	12223-23-3		
	68	Disperse Yellow 42	5124-25-4		
	69	Disperse Yellow 124	61968-69-2		
	70	Disperse Yellow 2GD 56	54077-16-6		
	71	Disperse Yellow GG 56	54077-16-6		
	72	Disperse Red 19	2734-52-3		
	73	Disperse blue 56	12217-79-7		
	74	Disperse blue 56.1	12217-79-8		
Reactive Dyes					
B	75	Reactive Black 5	17095-24-8	30	Dye printing of cotton
	76	Reactive Black 39	12731-63-4		
	77	Reactive Blue 49	12239-92-9		
	78	Reactive Blue HEXL	93951-21-4		
	79	Reactive Blue 220	128416-19-3		
	80	Reactive Blue 250	93951-21-4		
	81	Reactive Orange 84	91261-29-9		
	82	Reactive Orange 107	90597-79-8		
	83	Reactive Orange 122	79809-27-1		
	84	Reactive Orange 131/ W3R	12220-12-1		
	85	Reactive Orange 2R	42986-20-1		
	86	Reactive Orange H2R	12225-85-3		
	87	Reactive Red CD	68248-10-2		
	88	Reactive Red 21	11099-79-9		
	89	Reactive Red 24	70210-20-7		
	90	Reactive Red 111	88232-20-6		
	91	Reactive Red 120	61951-82-4		
	92	Reactive Red 141	61931-52-0		

	93	Reactive Red 194	23354-52-1		
	94	Reactive Red 195	93050-79-4		
	95	Reactive Red 198	145017-98-7		
	96	Reactive Red 245	340977-00-6		
	97	Reactive Red 250	125830-49-1		
	98	Reactive Violet 2R	8063-57-8		
	99	Reactive Yellow 18	12226-48-1		
	100	Reactive Yellow 81	59112-78-6		
	101	Reactive Yellow 84	61951-85-7		
	102	Reactive Yellow 95	71838-98-7		
	103	Reactive Yellow HEXL	12226-48-1		
	104	Reactive Yellow S3R	77907-38-1		
	105	Reactive Yellow 145	93050-80-7		
	106	Reactive Yellow 160	129898-77-7		
Acid Dyes					
C	107	Acid Blue 111	6420-90-4	20	Coloring of wool / Nylon / Leather
	108	Acid Blue 25	6408-78-2		
	109	Acid Blue 281	226923-51-9		
	110	Acid Black 194- 24709	61931-02-0		
	111	Acid Black 107/KBL-24703	12218-96-1		
	112	Acid Black 207- 24710	212516-19-3		
	113	Acid Black 210	99576-15-5		
	114	Acid Brown 282- 24601	12219-65-7		
	115	Acid Green 73	12219-93-1		
	116	Acid Orange 144	61814-64-0		
	117	Acid Orange 156	68555-86-2		
	118	Acid Red 260	12239-07-5		
	119	Acid Red 315	12220-47-2		
	120	Acid Red 405	83833-37-8		
	121	Acid Violet 90- 24801	6408-29-3		
	122	Acid Yellow 151	12715-61-6		
	123	Acid Yellow 246	119822-74-1		
	124	Acid Yellow 59	5601-29-6		
Direct Dyes					
D	125	Direct Base Brown 1	73507-19-4	5	Cellulosic Fabric/Paper/Lather
	126	Direct Brown 44/SBR	6252-62-6		
	127	Direct Black 168	85631-88-5		
	128	DIRECT RED 239	60202-35-9		
	129	Direct Black 22	6473-13-8		
	130	Direct Blue 273	70956-20-6		
	131	Direct Blue 71	4399-55-7		
	132	Direct Green 26/78	6388-26-7		
	133	Direct Orange 102	6598-63-6		

	134	Direct Orange 34	12222-37-6		
	135	Direct Red 16	07-02-27		
	136	Direct Red 227	12222-51-4		
	137	Direct Red 81	09-11-10		
	138	Direct Violet 66	04-03-98		
	139	Direct Violet 35	6227-20-9		
	140	Direct Yellow 11	1325-37-7		
	141	Direct Yellow 157	72705-26-1		
Vat Dyes					
E	142	Vat Green 9	128-60-9	15	cellulosic fiber/ cotton fiber / viscose rayon/ leather/ other fibers.
	143	Vat Black	2379-81-9		
	144	Vat Red -1	522-75-8		
	145	vat blue 2B	2475-31-2		
	146	vat pink R	2379-74-0		
	147	vat brown 5	3989-75-1		
	148	vat orange RF	3263-31-8		
Solvent Dyes					
F	149	Solvent Blue 104	116-75-6	15	Textile, Plastic and Inks
	150	Solvent Green 3	128-80-3		
	151	Solvent Violet 13	81-48-1		
	152	Solvent Blue 35	17354-14-2		
	153	Solvent Blue 78	2475-44-7		
	154	Solvent Red 135	20749-68-2		
	155	Solvent Orange 60	6925-69-5		
	156	Solvent Red 179	89106-94-5		
Basic Dyes					
G	157	Basic Brown 1	10114-58-6	15	Coloring of paper / acrylics
	158	Basic Yellow 2	2465-27-2		
	159	Basic Violet 1	8004-87-3		
	160	Basic Green 4	2437-29-8		
	161	Basic Green 1	633-03-4		
	162	Basic Blue 26	2580-56-5		
Non EC Product					
H	163	Standardization and Formulation of Dyes	--	120	For Dying and printing of Paper/Textile/Plastic
Total (A+B+C+D+E+F+G+H)				**270**	

4) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.

5) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.

6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.

7) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

8) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March-2021 to May-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

9) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.

10) Deliberation of the Committee:

- ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
- ✓ Total generated industrial effluent will be treated in in-house Primary ETP and then treated effluent will be sent to Common evaporation facility, M/s: Chhatral Environmental Management Pvt. Ltd., Dhanot for further treatment and disposal. Membership certificate is obtained for the same.
- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A-1</td><td>Total cost of Proposed Project
(Rs. in Crores):

<table><tr><th>Total Project</th></tr><tr><td>4.99 cr</td></tr></table>
Break-up of proposed project Cost:

<table><tr><th>Details</th><th>Project Cost
(Rs. In Crores)</th></tr></table></td><td></td></tr>
</table>

Land	1.10
Building	0.50
Machinery	2.00
Env. & Safety	1.24
Miscellaneous	0.15
Total	**4.99**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Particular	Detail	Capital Cost (Rs. In Crore)	Operating Cost (Rs. In Crore/ Month)	Maintenance Cost (Rs. In Crore/ Month)	Total Recurring Cost (Rs. In Crore/Month)
1	Waste Water	Primary ETP: 80 KLD + CMEE membership	0.63	0.68	0.012	0.692
2	Air	MCS: 2 Nos. Dust Collector: 1 Nos. Bag Filter: 2 Nos. Stack: 4 Nos. Scrubber: 3 Nos.	0.213	0.005	0.002	0.007
3	Hazardous Management	Membership Charges, Disposal & Transportation Charges	0.01	0.075	--	0.075
4	Fire & Safety	PLC (SCADA) & Electrical flame proof fitting, Fire Extinguisher, PPE's & Fire Proximity Suits-2 Nos., Fire Hydrant, sprinkler system, Fire Safety & Fire water tank	0.324	0.0078	0.003	0.0108
6	Green Belt Development	125 Trees	0.0069	0.0007	0.0003	0.001
7	Occupational Health	OHC Center & Medical checkup	0.03	0.003	0.0015	0.0045
8	Noise Control	Acoustic enclosure & Silencer & Vibration pads &	0.035	0.002	0.001	0.003

		Noise PPEs				
9	CER Funds	2.8%	0.14	0.0037	0.0008	0.0045
Total			**1.39**			**0.80**

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Rain Water Recharging Pits at Ola village (Total – 3 Nos @ 2 Lakhs Per Recharging Pits Near Pond / lake)
- ✓ Common Drinking Water Treatment Facility (Tertiary + Disinfection) at Ola village @ 7 Lakhs For 50 KLD Cap.

B	**Land / Plot ownership details:** **GIDC PLOT Transfer in the name of M/s. F I DYE CHEM via letter no.: GIDC/RM/MEH/TRF/FTO/CHH1/190, Date: 26.07.2020.**
B-1	**Plot area** Total Plot area: 1513.75 Sq. m. -
B-2	**Area adequacy**

AREA ADEQUACY (F.I Dye Chem)

S. N.	Particular	Qty. in MT/KL	Remark	Area required	Area proposed	**G. Floor**	F. Floor	S. Floor
1	F.G (G+1)	63 MT	1 week inventory	65	80	**40**	40	-
2	R.M (on FF)	95 MT	1 week inventory	100	105	**-**	105	-
3	Tank farm (PESO)	20 KL Methanol-10 KL MCB – 10 KL	At a time	25	25	**25**	-	-
4	Tank farm (Non-PESO)	55 KL H2SO4 – 15 KL HCl – 15 KL Oleum – 5 KL X 2 Nos (1 Spare Tank) Caustic	At a time	60	60	**60**	-	-

		Lye – 15 KL						
5	Drum storage area (flammable & Toxic chemicals)	15 KL (200 lit*75 Nos)	At a time	35	40	**40**	-	-
6	Drum storage area (Non-Flammable)	9 KL (200 lit*45 Nos)	At a time	25	65	**65**	-	-
7	Haz. waste storage area	150 MT	90 days inventory	75	80	**80**	-	-
8	ETP	80 KLD	-	50	60	**60**	-	-
9	admin building and lab (Second Floor on FG)	-	-	25	40	**-**	-	40
10	Plant & Machinary-1 (G+2)	7.3 MT	MT/Day	200	255	**85**	85	85
11	Boiler and utility	Boiler-3 TPH, TFH-6.0 Lac Kcal/Hr	-	35	40	**40**	-	-
12	OHC	-	-	16	16	**16**	-	-
13	Green Belt @ 33 %	33%	338.75 inside plant premises	499.5	499.75	**338.75**	-	-
14	Road Area	-	-	645	645	645	-	-
15	Pathway	-	-	7	7	7	-	-
16	Security Cabin	-	-	6	6	6	-	-
17	Security Cabin	-	-	6	6	6	-	-
			Total	1874.5	2029.75	**1513.75**	230	125

- Hence, adequate area is available for proposed new Facility.

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from

	overall safety perspective, has been provided in proposal and is satisfactory.
B-3	**Green belt area** <table><tr><td></td><td>Total (Sq. meter)</td></tr><tr><td>Area in Sq. meter</td><td>499.75 sq.mt (338.75 sq. m. within premises + 161 sq. m. outside premises)</td></tr><tr><td>% of total area</td><td>(22.38% + 10.62%) = 33.0%</td></tr></table> **For Outside greenbelt, Permission obtained from Chhatral Gram Panchayat Dated: 09/10/2021 to develop greenbelt @ 200 sq.mtr (approx.) at land of S.N. 1497.** <table><tr><td>Outside Greenbelt area (Four corners) @ 130.0 sq. m.</td><td>Latitude</td><td>Longitude</td></tr><tr><td>A</td><td>23°16'36.99"N,</td><td>72°27'01.86"E</td></tr><tr><td>B</td><td>23°16'36.90"N,</td><td>72°27'01.54"E</td></tr><tr><td>C</td><td>23°16'36.29"N,</td><td>72°27'02.08"E</td></tr><tr><td>D</td><td>23°16'36.21"N,</td><td>72°27'01.77"E</td></tr></table> **Comments:** The condition shall be given that - ✓ The PP shall develop green **belt [338.75 m2 (22.38%) inside plant premises + 161 m2 (10.62%)** at **land of S.N. 1497= Total: 499.75 Sq. m.) i.e. 33.0 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.
C	**Employment generation** <table><tr><td>Total</td></tr><tr><td>41</td></tr></table> -
D	**WATER**
D-1	**Source of Water Supply** Chhatral GIDC ➢ GIDC Letter no.: NAO/NAA/CHHATRAL/1718, Date: 11.10.2021

Comments:

- Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	Quantity KLD
(M) Domestic	1.5
(N) Gardening	1.0
(O) Industrial	
Process	70.0
Washing	5.0
Boiler	14.0
Cooling	28.0
Others (Scrubber)	-
Industrial Total	**117.0**
Grand Total (A+B+C)	**119.5**

-

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

Category	Waste water KLD
(I) Domestic	1.5
(J) Industrial	
Process	67.3
Washing	5.0
Boiler	0.9
Cooling	2.8
Others (Scrubber)	-
Total Industrial waste water	**76.0**
Total [A + B]	**77.5**

-

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4 Break-up of waste water disposal & facility (For Domestic)

1.5 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to

Common Evaporation facility (Chhatral Environment Management System Pvt. Ltd.) for further treatment and final disposal.

Comments:

- ✓ Domestic wastewater generation shall not exceed 1.5 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
- ✓ Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	**Quantity KLD**	**Facility**
1	76.0	Primary ETP + Common Evaporation Facility
Total	**76.0**	

Comments:

1. Industrial effluent shall be treated as below.
   - 76 KLD industrial effluent generated from Process, Washing, Cooling tower and Boiler shall be treated in in-house Primary ETP and then will be sent to Common Evaporation facility (Chhatral Environment Management System Pvt. Ltd.) for further treatment and final disposal.
   - Treated waste water shall be sent to Common Evaporation facility of Chhatral only after complying with the inlet norms of Common Evaporation facility prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
2. Unit shall provide ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement : 1500 KVA
E-2	**Flue gas emission details**

-

Sr. no.	**Source of emission With Capacity**	**Stack Height (meter)**	**Type of Fuel**	**Quantity of Fuel MT/ Day**	**Type of emissions i.e. Air Pollutants**	**Air Pollution Control Measures (APCM)**
4.	Boiler (3 TPH-1 Nos.)	30	Natural gas Or Coal	6777 SCM/Day OR 10 MT/Day	SPM: 150 mg/Nm^3 SO_2: 100 ppm	Multi Cyclone Separator, Bag filter &

					NO_X: 50 ppm	Alkali Scrubber
5.	Hot air generator- Nos. 1(Cap 6 lac kcal/hr.)	30	Natural gas Or Coal	2296 SCM/Day OR 4.0 MT/Day	SPM: 150 mg/Nm^3 SO_2: 100 ppm NO_X: 50 ppm	Multi Cyclone Separator, Bag filter & Alkali Scrubber
6.	DG Set (250 KVA)	11	Diesel	60 Lit/Hr	SPM: 150 mg/Nm^3 SO_2: 100 ppm NO_X: 50 ppm	Adequate Stack height and acoustic enclosure

-

E-3	**Process gas**

-

Sr. No.	**Specific Source of emission (Name of the Product & Process)**	**Type of Emission**	**Stack/Vent Height (meter)**	**Air Pollution Control Measures (APCM)**
1	Spray Dryer	Particulate Matter: 150 mg/Nm3	18	Water Scrubber & Dust Collector

-

E-4	**Fugitive emission** details with its mitigation measures.

- Green belt will be developed which will help to reduce fugitive emission.
- All pumps, Compressors and Agitator must be mechanically sealed.
- All process pumps must be provided trays to collect probable leakage.
- More weightage on selection of MOC of piping must be given to avoid leakage/spillage.
- Proper system must be provided for decontamination and effective cleaning of drums.
- Face mask must be provided to all workers to avoid odor nuisance.
- Developing appropriate green belt. Vehicular speed will be limited to reduce airborne fugitive dust.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters / HAG, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**

F-1	**Hazardous waste management matrix**

-

Sr. no.	**Type/Name of Hazardous waste**	**Specific Source of generation (Name of the Activity, Product etc.)**	**Category and Schedule as per HW Rules.**	**Quantity (MT/ Annum)**	**Management of HW**
1.	Used Oil	Maintenance	5.1/ SCH-I	0.5	Collection, storage, transportation, Disposal by selling to Registered re fineries.
2.	Discarded containers/ Bags/Linears	Packing Materials, Storage of Raw material	33.1/ SCH-I	80	Collection, Storage, Reuse & sell to authorized vendor.
3.	ETP Sludge	ETP	35.3/ SCH-I	365	Collection, Storage, Transportation, disposal at nearest TSDF site.
4.	Distillation Residue	Disperse Red 277, Vat Orange, SOLVENT VIOLET 13	26.1/ SCH-I	150	Collection, Storage, Transportation & send to pre/co-processing units (cement industries) OR disposal at nearest CHWIF site.
5.	Organic waste	From Mfg. Process Disperse blue 354	26.1/ SCH-I	232	Collection, Storage, Transportation & send to pre/co-processing units (cement industries) OR disposal at nearest CHWIF site.
6.	Inorganic waste	From Mfg. Process Vat pink, Vat Orange, SOLVENT BLUE 78	26.1/ SCH-I	895	Collection, Storage, Transportation, disposal at nearest TSDF site. Through GPS Mounted Vehicles.
7.	Spent Solvent	Disperse red 364, Vat Orange, Solvent Orange 60	26.4/ SCH-I	6890	Collection, Storage, Handling recovered & recycled by Solvent Distillation Plant within premises or

					send to end user having Rule-9.
8.	Spent Catalyst	From Mfg. Process Disperse Yellow 42	26.5/ SCH-I	19.0	Collection, Storage, Transportation & send to pre/co-processing units (cement industries) OR disposal at nearest CHWIF site. Through GPS Mounted Vehicles.

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 460 MTPA.

Comments:

- ✓ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Solvent Recovery Table

Sr. No.	Product Name	Solvent	Qty. Used MT/ MT	Qty. Recovered MT/MT	Distillation Residue	Total Losses	Solvent Recovery %
1	Disperse Blue GSL	DMF	1.2	1.14	0.0420	0.0600	95
		Methanol	1.1	1.07	0.0165	0.0330	97
2	Disperse Blue	DMF	2.8	2.66	0.0980	0.1400	95

	165:1	Methanol	3	2.91	0.0450	0.0900	97
3	Disperse Blue 366	Methanol	1.1	1.07	0.0165	0.0330	97
		DMF	3	2.85	0.1050	0.1500	95
4	Disperse Red 343	Methanol	0.1	0.10	0.0015	0.0030	97
		DMF	3.4	3.23	0.1190	0.1700	95
5	Disperse Yellow 184.1	Methanol	2.7	2.62	0.0405	0.0810	97
		ECA	0.18	0.17	0.0027	0.0054	97
6	Disperse Yellow 82	Methanol	2.7	2.62	0.0405	0.0810	97
		ECA	0.18	0.17	0.0027	0.0054	97
7	Disperse Yellow 242	Methanol	3	2.91	0.0450	0.0900	97
		DMF	0.7	0.67	0.0245	0.0350	95
8	Disperse blue 354	Methanol	5.6	5.43	0.0840	0.1680	97
9	DISPERSE RED 6B	DMF	0.5	0.48	0.0175	0.0250	95
10	Disperse Red 277	Methanol	7	6.79	0.1050	0.2100	97
		DMF	5	4.75	0.1750	0.2500	95
11	Disperse red 364	Methanol	9	8.73	0.1350	0.2700	97
12	Vat Orange	Methanol	3.66	3.55	0.0549	0.1098	97
		1,2-Dichlorobenzene	3.66	3.48	0.1281	0.1830	95
13	SOLVENT GREEN 3	O-Xylene	0.4	0.39	0.0060	0.0120	97
14	SOLVENT VIOLET 13	N-Butanol	3.1	2.95	0.1085	0.1550	95
15	Solvent Blue 35	Methanol	1.5	1.46	0.0225	0.0450	97
		N-Butanol	0.5	0.48	0.0175	0.0250	95
16	SOLVENT BLUE 78	Xylene	0.5	0.48	0.0175	0.0250	95
17	SOLVENT RED 135	O-Xylene	2.1	2.04	0.0315	0.0630	97
		Methanol	0.5	0.49	0.0075	0.0150	97
18	Solvent Orange 60	O-Xylene	2.6	2.52	0.0390	0.0780	97
		Methanol	5.2	5.04	0.0780	0.1560	97
19	SOLVENT RED 179	Methanol	2.4	2.33	0.0360	0.0720	97

G-2	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- All the solvents shall be directly distilled from product mixes and; if required shall be purified in packed column with the help of reflux.
- The solvent distillation system shall be designed so as to achieve minimum 95.0 % recovery of solvent.
- All the pumps shall be mechanical seal type to avoid any leakage of solvent.
- All necessary firefighting systems shall be provided with alarm system. Flame proof wiring and flame proof electrical accessories shall be provided to avoid any mishap.
- All the distillation column vents are also connected to cooling water/ chilled brine condensers for maximum possible recovery of the solvents.

- All the vents will be connected to a common carbon Absorber for removing traces of solvent from vent gases.
- Residue generated from the distillation will be incinerated in-house or sent to BEIL incinerator site.
- Two condenser will install with cooling water and chilled brine to recover the solvent.

Primary Condenser HE-01: Cooling Tower water or Chilled water at 10 0C -will be used to condense the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a Secondary Condenser VOC Trap Condenser HE-02: Chilled Brine at -05 0C will be used to trap any traces of Solvent which is slipped from Secondary condenser.

G-3	**LDAR proposed:**

The Following methodology to be adopted during LDAR study:

- Identify the Chemical streams that must be monitored.
- Types of components (pumps, valves, connectors, etc.) to be monitored
- Frequency of monitoring.
- Actions to be taken if a leak is detected.
- Length of time in which an attempt to repair the leak must be performed.
- Actions that must be taken if a leak cannot be repaired within guidelines.
- Record-keeping and reporting requirements.

Following frequency of monitoring of leaks and schedule for repair of leaks shall be followed:

S.N.	Component	Frequency of monitoring	Repair schedule
1.	Valves / Flanges	Quarterly (semi-annual after two consecutive period with < 2% leaks and annual after 5 periods with < 2% leaks)	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak.
2.	Pump seal	Quarterly	
3.	Compressor seals	Quarterly	
4.	Pressure relief devices	Quarterly	
5.	Pressure relief devices (after venting)	Within 24 hrs.	
6.	Process drains	Annually	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak.
7.	Components that are difficult to monitor	Annually	
8.	Pump seals with visible liquid dripping	Weekly	Immediately
9.	Any component with visible leaks	Weekly	Immediately
10.	Any component after repair / replacement	Within a week	-

LDAR for specific solvents:

Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages will be occur)	Action taken for prevention of leakages
1	Methanol	Tank	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	•For using Gas Detector by PID Sensor technology.	•If valve will be leak stop pumping system and replace with new valve. When pump seal will be leak immediately stop solvent transfer and immediately repair or replace with new seal.	•Check Thickness of tank •Using fix pipeline for solvent transfer •Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for Solvent Tanker

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

Storage of Hazardous chemicals in Tanks

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
PESO TANK				
1	Methanol	10 KL (U/g)	1	very highly Flammable
2	MCB	10 KL (U/g)	1	highly flammable
NON-PESO TANK				
3	Sulphuric acid	15 KL	1	Highly Toxic & corrosive
4	Sodium Hydroxide	15 KL	1	Highly Toxic & corrosive
5	HCl	15 KL	1	Highly Toxic & corrosive
6	oleum (25%)	5 KL	2	Toxic & corrosive

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Sr. no	Name of Chemical	Max. Storage (MT/KL)	Number of Drum & Bottles	MOC/ Packing	Hazardous Characteristics of Chemical
1	Acetic acid	3 MT	200 Lit. x 15 Nos.	HDPE Drum	Highly Flammable
2	Formaldehyde	1 MT	200 Lit. x 5 Nos.	HDPE Drum	Highly Toxic
3	Di Methyl Aniline	1 MT	200 Lit. x 5 Nos.	HDPE Drum	Highly Toxic
4	ODCB	5 MT	200 Lit. x 25 Nos.	HDPE Drum	Highly Flammable
5	O-Xylene	3 MT	200 Lit. x 15 Nos.	HDPE Drum	Highly Flammable
6	Sodium cyanide	0.4 MT	200 Lit. x 2 Nos.	HDPE Drum	Highly Toxic
7	Nitro Benzene	1 MT	200 Lit. x 5 Nos.	HDPE Drum	Highly Toxic
8	Nitric acid (30%)	1 MT	200 Lit. x 5 Nos.	HDPE Drum	Toxic, Oxidizer & Corrosive
9	Benzoyl Chloride	0.2 MT	200 Lit. x 1 Nos.	HDPE Drum	Highly Toxic & Corrosive
10	Aniline	0.2 MT	200 Lit. x 1 Nos.	HDPE Drum	Highly Toxic
11	Formic Acid	2 MT	200 Lit. x 10 Nos.	HDPE Drum	Highly Toxic & Flammable
12	Phenol	2 MT	200 Lit. x 10 Nos.	HDPE Drum	Highly Toxic

13	DMF	4 MT	200 Lit. x 20 Nos.	HDPE Drum	Highly Flammable
14	Liq. Ammonia	0.4 MT	200 Lit x 2 Nos.	HDPE Drum	Highly Toxic

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	✓ Storage should be cool, well ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. ✓ Store in original container. Keep containers tightly closed and upright when not in use. ✓ Proper label and identification board /stickers will be provided in the storage area. ✓ Conductive drum pallets will be provided. ✓ Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust and static earthing provision will be made. ✓ Ground container and transfer equipment to eliminate static electric sparks. ✓ Smoking and other spark, flame generating item will be banned near storage area. FLP type light fittings will be provided. ✓ Handling of materials from Drum will be done only through Mechanical Transfer System only. ✓ Training should be provided to employees for safe storage, handling and transpiration. ✓ When using, do not eat, smoke or drink. ✓ Fire Hydrant with monitor, fire proximity suits, automatic sprinkler system, Safety shower & eye wash unit should be installed nearby area. ✓ Provision of Respiratory protective equipment (airline respirator & SCBA) & personal protective equipment should be available. ✓ For spills involving small volumes of dilute solution of Xylene/Formaldehyde/Methanol, the following cleaning procedure can be used ✓ Wear appropriate personal protective equipment (PPE) ✓ Remove any ignition source from the spill area; ✓ Clean the spill area with a mixture of water and soap ✓ Dry the spill area with paper towels ✓ Onsite emergency plan prepared and mock drill will be carried out. ✓ Safety sign board displaying Do's and Don'ts in local language.
CORROSIVE & CHEMICALS	✓ Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. ✓ Corrosive substances will not be allowed to come in contact with materials that may react. ✓ All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances will be protected by suitable coatings, impervious to and unaffected by corrosives.

		✓ All containers or receptacles will be clearly labelled to indicate their contents and will bear the danger symbol for corrosives. ✓ Adequate ventilation and exhaust arrangement whether general or local, will be provided whenever corrosive toxic gases or dust are present. ✓ Personal protective devices will be used. ✓ First aid treatment facilities will be provided and all concerned will be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. ✓ Safety showers and eye washers will be provided.	
	TOXIC CHEMICALS	✓ Storage should be cool, well ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. ✓ Store in original container. Keep containers tightly closed and upright when not in use. ✓ Proper label and identification board /stickers will be provided in the storage area. ✓ Conductive drum pallets will be provided. ✓ Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust. ✓ Ground container and transfer equipment to eliminate static electric sparks. ✓ Handling of materials from Drum will be done only through Mechanical Transfer System only. Unloading procedure will be prepared and implemented. ✓ Training should be provided to employees for safe storage, handling and transpiration. ✓ Safety shower & eye wash unit should be installed nearby area. ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory protective equipment (airline respirator & SCBA) etc. will be provided to operator ✓ For spills involving small volumes, the following cleaning procedure can be used ✓ wear appropriate personal protective equipment (PPE) ✓ clean the spill area with a mixture of water and soap ✓ Neutralizing agent will be kept ready for tackle any emergency spillage. ✓ Onsite emergency plan prepared and mock drill will be carried out. Safety sign board displaying Do's and Don'ts in local language.	
	REACTIVE CHEMICALS	✓ Store minimum quantities. ✓ Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources. ✓ Spillage control; bund, spray, blanket, containment. Drain to collection pit. ✓ Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area. ✓ Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. ✓ Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles. ✓ Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks.	

	✓ Will ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting. ✓ Label (name and number); identify loading/unloading/transfer couplings. ✓ Provide appropriate fire protection (sprinkler, dry powder, gas). ✓ Will ensure adequate access for both normal and emergency purposes with alternative routes

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals.

Comments:

✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

NOT APPLICABLE.

H-3	**Details of Fire Load Calculation**

Total Plot Area:	1513.75 Sq. m
Area utilized for plant activity:	255 Sq. m
Area utilized for Hazardous Chemicals Storage:	195.0 Sq. m
Number of Floors:	03 (G+2)
Water requirement for firefighting in KLD:	10.01 KLD
Water storage tank provided for firefighting in KLD:	200 m^3
Details of Hydrant Pumps:	**Fire Hydrant Pump Details**

Type of Pump	Quantity	Capacity	Head	RPM
Main Electrical Pump	1	4550 Lit/Min	88 Mt	2920
Jockey Pump	1	1080 Lit/Min	88 Mt	1800
Diesel Pump	1	4550 Lit/Min	88 Mt	2920

Nearest Fire Station :	Fire Bridged Station –New Fire Station, Kalol @ 8.3 km (15-20 Min)
Applicability of Off Site Emergency Plan:	Yes

Comments:

- ✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

H-4	Details of Fire NOC/Certificate:

Unit will obtain Fire NOC after receipt of EC and before getting CTO.

H-5	Details of Occupational Health Centre (OHC):

-

Number of permanent Employee:	19
Number of Contractual person/Labour:	22
Area provided for OHC:	16
Number of First Aid Boxes:	10
Nearest General Hospital:	Esis Chhatral – Hospital-0.89 Km, Chhatral
Name of Antidotes to be store in plant:	Sodium Hydro-Carbonate (4% Conc.), Milk, Lime Juice, Milk of Megnesia, 10 mg diazepam injection, Airline respirator, butter milk, Pontocane (0.5% solution) or Benoxinate (Novesine) 0.4 %, magnesium sulphate

-

Comments

- ✓ Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

12) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters

shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.

    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.

c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 177.5 KLD. Unit shall recycle 58.0 KLD Boiler condensate water in Boiler itself. Hence, fresh water requirement shall not exceed 119.5 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
10. The industrial effluent generation from the project shall not exceed 76.0 KLD.
11. Management of industrial waste water shall be as under:
    - Total industrial effluent shall be treated in ETP consist of primary ETP units and then treated effluent shall be discharged into Common Evaporation facility (Chhatral Environment Management System Pvt. Ltd.) for further treatment and final disposal.
    - Treated waste water shall be sent to Common Evaporation facility of Chhatral only after complying with the inlet norms of Common Evaporation facility prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
12. Domestic wastewater generation shall not exceed 1.5 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
14. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent

treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

15. Unit shall not exceed fuel consumption for Boiler, Hot Air Generator and D G Set as per the point no. E-2 as mentioned above.
16. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
17. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
18. PP shall use approved fuels only as fuel in boilers.
19. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
21. For control of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
22. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.

- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

23. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, CO and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

24. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
25. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
26. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
27. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
28. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

29. The PP shall develop green **belt [338.75 m2 (22.38%) inside plant premises + 161 m2 (10.62%)** at **land of S.N. 1497= Total: 499.75 Sq. m.) i.e. 33.0 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

30. The project proponent shall carry out the activities (Rain Water Recharging Pits at Ola village (Total – 3 Nos @ 2 Lakhs Per Recharging Pits Near Pond / lake) and Common Drinking Water Treatment Facility (Tertiary + Disinfection) at Ola village @ 7 Lakhs For 50 KLD Cap.) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
31. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/S. ECOGREEN ENVIRO SERVICES and submitted by the project proponent and commitments made during presentation before SEAC and

proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

32. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
33. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
34. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
35. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
36. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
37. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
38. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

8.	SIA/GJ/ IND3/63697/2019	**M/s. Shree Colosperse Pvt. Ltd.** Plot no: 6412, GIDC Estate, Ankleshwar, Dist.: Bharuch, Gujarat-393 002	Appraisal

Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.19. Type of application:	EC-Expansion
1.20. Proposal no.	SIA/GJ/IND2/66348/2006
1.21. Category of Project :	05/10/2021
1.22. Date of application :	Form -1, Pre-feasibility Report, & EIA Report.

1.23. Documents Submitted by Project Proponent(PP)	SIA/GJ/102006/2021 & 01/06/2021
1.24. TOR No. & Date :	05/10/2021
1.25. Technical expert / Environmental Consultant :	M/s. Jyoti Om Chemical Research Centre Pvt. Ltd.
1.26. SEAC Meeting No. and Date:	315th meeting dated 29.11.2021
1.27. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-90812, Date of Validity: 24/10/2022 Self-compliance report submitted with application.

2) Project proponent has submitted EIA Report prepared by M/s. Jyoti Om Chemical Research Centre Pvt. Ltd. based on the TOR issued by SEIAA.

3) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Sr. no.	**Name of the Products**	**CI no. / CAS no.**	**Quantity MT/Month**			**End-use of the products**
			Existing	**Proposed**	**Total**	
I.	DISPERSE DYES **(**AZO Group**)** Representative Products**:**		6.75	73.25	80	Textile Industries
1.	Disperse navy blue 3G (IGNS) **and/or**	11345/ 2537-62-4				
2.	Disperse golden yellow GG **and/or**	21655/ 54077-16-6				
3.	Disperse rubine 3B **and/or**	11338/ 3769-57-1				
4.	Disperse rubine GFL **and/or**	11116/ 16889-10-4				
5.	Disperse rubine 5B **and/or**	99035-78-6				
6.	Disperse scarlet RR **and/or**	11131/ 63439-91-8				
7.	Disperse yellow brown REL **and/or**	11116/ 12270-45-0				
8.	Disperse orange ERL (Disperse Orange 25) **and/or**	11227/ 31482-56-1				
9.	Disperse violet B **and/or**	60724/ 52697-38-8				
10.	Disperse blue SE2R1 **and/or**	11078 /2537-62-4				
11.	Disperse yellow 7 GL **and/or**	47023/ 56509-56-9				

	12.	Disperse rubine S2GL **and/or**	11116/ 16889-10-4					
	13.	Disperse orange 288 **and/or**	9662-24-7					
	14.	Disperse scarlet 3R (Disperse Red 50) **and/or**	11226/ 12223-35-7					
	15.	Disperse brown 3REL **and/or**	52623-75-3					
	16.	Disperse golden yellow 2GD **and/or**	54077-16-6					
	17.	Disperse yellow 119 **and/or**	57308-41-5					
	18.	Disperse yellow 241 **and/or**	83249-52-9					
	19.	Disperse yellow 211 **and/or**	12755/ 86836-02-4					
	20.	Disperse blue 291 **and/or**	56548-64-2					
	21.	Disperse violet 93 **and/or**	52697-38-8					
	22.	Disperse yellow 5RX **and/or**	26090/ 6300-37-4					
	23.	Disperse yellow M7G **and/or**	12700					
	23.	Disperse red 9 **and/or**	60505 /82-38-2					
	25.	Disperse red 1 **and/or**	11110/ 2872-52-8					
	26.	Disperse red 13 **and/or**	11115/ 3180-81-2					
	27.	Disperse red 17 **and/or**	11210/ 3179-89-3					
	28.	Disperse yellow 3 (Disperse yellow G) **and/or**	11855/ 2832-40-8					
	II	**Dispersing agent SS**	9041-04-7	**1**	**49**	**50**	**Textile Industries**	
	III	**DISPERSE DYES (Miscellaneous Type) Representative Products:**		**1**	**9**	**10**	**Textile Industries**	
	1.	Disperse yellow AL (Disperse yellow 1) and/or	119-15-3					
	2	Disperse yellow FFL and/or	10338/ 5124-25-4					
	IV	**DISPERSE DYES (Anthraquinone Group)**		**0**	**10**	**10**	**Textile Industries**	
	1.	Disperse blue FFR **and/or**	61505/ 2475-46-9					
	2.	Disperse blue BN **and/or**	2475-46-9					

3.	Disperse red 11 **and/or**	62015/ 2872-48-2				
4.	Disperse blue 60 **and/or**	61104/ 12217-80-0				
5.	Disperse violet 26 **and/or**	62025/ 6408-72-6				
V	**AZO Pigments**		**0**	**10**	**10**	**Paints & coatings industries**
1.	Pigment yellow 12 **and/or**	21090/ 8358-85-6				
2.	Pigment yellow 17 **and/or**	21105/ 4531-49-1				
3.	Pigment yellow 83 **and/or**	21108/ 5567-15-7				
4.	Pigment orange 13 **and/or**	21110/ 3520-72-7				
5.	Pigment orange 34 **and/or**	21115/ 15793-73-4				
6.	Pigment Rubin tonner **and/or**	15850/ 5281-04-9				
7.	Pigment lake red CT **and/or**	73360/ 2379-74-0				
V.	M-8 (n-cyano ethyl methyl aniline)	94-34-8	0	10	10	Dyestuff & Dyes Intermediates
	Total		**8.75**	**161.25**	**170**	

4) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
5) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
7) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
8) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period December-2020 to February-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant

concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

9) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.

10) Committee noted the following

- Generated effluent shall be treated in unit's own ETP followed by RO.
- Unit shall continue 3.5 KLD effluent discharges into M/s. ETL as per existing consent.
- Remaining waste water will be sent to CMEE of M/s: BEIL, Ankleshwar. Membership certificate for the same is obtained.
- Domestic effluent shall be treated along with industrial effluent.
- Natural gas shall be used as fuel in Boiler and HAG.
- There will be no any process gas emission.
- Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
- PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules 2016.

11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A-1</td><td>Total cost of Proposed Project
(Rs. in Crores):

<table>
<tr><th>Existing</th><th>Proposed</th><th>Total</th></tr>
<tr><td>0.75 Crores</td><td>2.50 Crores</td><td>3.25 Crores</td></tr>
</table>

Break-up of proposed project Cost:

<table>
<tr><th>Details</th><th>Project Cost
(Rs. In Crores)</th></tr>
<tr><td>Land</td><td>0.20</td></tr>
<tr><td>Building</td><td>0.15</td></tr>
<tr><td>Machinery</td><td>1.61</td></tr>
</table>
</td><td></td></tr>
</table>

Env. & Safety	1.24
Miscellaneous	0.05
Total	**3.25**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Unit	Detail	Capital Cost (Rs. In Crore)	Operating Cost (Rs. In Crore)	Maintenance Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Effluent treatment Plant	Installation of ETP, RO, MEE	0.27	1.20	0.04	1.24
2	Solid Waste management	Landfill and Co-processing of waste	0.10	0.035	0.005	0.04
3	Air Pollution Control Measures	Wet Scrubber & Adequate Stack Height	0.17	0.04	0.01	0.05
4	Green belt development	Plantation	0.01	0.008	0.002	0.010
5	Safety Equipment	PPE, fire extinguishers, First Aid Kit, Smoke detector, Ventilation, Fire Hydrant System, Fire Proximity Suit, Water Sprinker.	0.25	0.090	0.010	0.100
6	DCS System	Acrylonitrile Storage & handling, Distillation	0.16	0.04	0.01	0.05
7	OHC	First Aid Kit & Medical equipment	0.105	0.01	0.001	0.011
8	CER Cost	Unit will carried out CER Activities in Kosamadi Village.	0.02	0.005	0.000	0.005
9	Noise	Acoustic	0.05	0.01	0.005	0.015

	Control	Enclosure for Boiler & DG set				
Total			1.113	1.438	0.083	1.521

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Tree plantation shall be carried out surrounding the pond of Kosamadi Village

B	**Land / Plot ownership details:** This is an existing dyes manufacturing unit. GIDC had allotted the land to unit vide file no. GIDC/RM-A/ATL/PL/SHD/2764 dated 2/7/1990 for chemical manufacturing purpose.
B-1	**Plot area**

Existing	Proposed	Total
1888 Sq. m.	0 Sq. m.	1888 Sq. m.

B-2

Area adequacy

Table

Sr. No.	Particulars	Ground Floor	First Floor	Second Floor	Total Floor	% Land Area
1	**Green Belt**	367.55	--	--	367.55	13.67
2	**Security Cabin**	25	--	--	25	0.93
3	**U. G. Water Tank**	25	--	--	25	0.93
4	**F. G. Storage**	50	--	--	50	1.86
5	**Solvent Storage**	50	--	--	50	1.86
6	**ETP**	70	--	--	70	2.60
7	**Haz. Waste Storage**	30	--	--	30	1.12
8	**Utility Building**	130	--	--	130	4.84
9	**Existing & Proposed Plant Building**	400	400	400	1200	44.64

10	**R. M. Storage**	200	--	--	200	7.44
11	**Admin Building**	15	--	--	15	0.56
12	**OHC**	15	--	--	15	0.56
13	**Road Area**	510.45	--	--	510.45	18.99
		1888	**400**	**400**	**2688**	**100.00**

- Hence, adequate area is available for proposed new Facility.

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 **Green belt area**

	Existing	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	178.75 (Within Premises)	260.00 (Outside Premises)	438.75 (178.75 sq. m inside the boundary + 260 sq. m outside the premises)
% of total area	(19.47 % of Total area)	(13.77 % of Total area)	33.24 (19.47 % inside the boundary + 13.77 % outside the premises)

The condition shall be given that -

- ✓ The PP shall develop green **belt [178.75 m2 (19.47%) inside plant premises + 260 m2 (13.77%)** at Common Plot in Ankleshwar GIDC**= Total: 438.75 Sq. m.) i.e. 33.24 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution

abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Existing	Proposed	Total
13	30	43

-

D **WATER**

D-1 **Source of Water Supply**

- Water supply from GIDC pipeline letter via no -:NTA/ANK/DEE(WS)/1550 dated 18th- Nov-2021.

Comments:

Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Category	**Existing** KLD	**Proposed (Additional)** KLD	**Total after Expansion** KLD
(P) Domestic	3.5	2.5	6
(Q) Gardening	0.2	3.3	3.5
(R) Industrial			
Process	5.3	48.2	53.5
Washing	0	6	6
Boiler	0.5	5	5.5
Cooling	0.5	5	5.5
Others	0	0	0
Industrial Total	**6.3**	**64.2**	**70.5**
Grand Total (A+B+C)	**10**	**70**	**80**

-

Comments:

1) The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

	Existing KLD	**Proposed (Additional)**	**Total after Expansion**

Category		KLD	KLD
(K) Domestic	2.5	2.0	4.5
(L) Industrial			
Process	3.1	28.9	32
Washing	0	6	6
Boiler	0.2	1.3	1.5
Cooling	0.2	1.3	1.5
Others	0	0	0
Total Industrial waste water	**3.5**	**37.5**	**41**

Comments:

- ✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic after proposed expansion)

4.5 KLD Domestic Wastewater will be treated in ETP along with industrial effluent.

Comments:

1) Domestic wastewater generation shall not exceed 4.5 KL/day for proposed project and it shall be treated in ETP.

D-5	**Break-up of waste water disposal & facility (For Industrial after proposed expansion)**

-

Sr. no.	**Quantity KLD**	**Facility**
1	35 KLD	In house ETP
2	6 KLD	Washing water recycled in process
Total	41 KLD	

Comments:

1. Total effluent generation shall be 45.5 KLD (Domestic 4.5 KLD + Industrial 41 KLD). In, 6 KLD washing wastewater shall be reused in process. Existing and proposed wastewater shall be treated in unit's own ETP treatment system. 3.5 KLD treated effluent shall be discharged in to M/s. ETL and remaining shall be sent to RO plant (36 KLD). RO permeate (27 KLD) shall be reused and RO reject (9 KLD) shall be sent to CMEE.

2. Unit shall provide ETP with adequate capacity.
3. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement : 300 KVA
E-2	**Flue gas emission details**

- **Existing & Proposed**

Sr. no.	**Source of emission With Capacity**	**Stack Height (meter)**	**Type of Fuel**	**Quantity of Fuel MT/Day**	**Type of emissions i.e. Air Pollutants**	**Air Pollution Control Measures (APCM)**
Existing						
1	Boiler (1 TPH)	30	Natural Gas	1200 SM3/Day	PM SO2 NOx	Adequate Stack Height
2	Hot Air Generator (1 lac kcal) with Spray Dryer	30	Natural Gas	2160 SM3/Day	PM SO2 NOx	Wet Scrubber
3	Hot Air Generator (1 lac kcal) with Tray Dryer	30	Natural Gas	2160 SM3/Days	PM SO2 NOx	Wet Scrubber
Proposed						
4	Boiler (2 TPH)	30	Natural Gas	5160 SM3/Day	PM SO2 NOx	Adequate Stack Height
5	Hot Air Generator (3 lac kcal) with Spray Dryer	30	Natural Gas	5160 SM3/Day	PM SO2 NOx	Wet Scrubber
6	D.G. Set - 200 KVA (emergency used only)	11	Diesel	40 Liter/hr	PM SO2 NOx	Adequate Stack Height and Acoustic Enclosure

E-3	**Process gas**

- Existing & Proposed

Sr. no.	**Specific Source of emission (Name of the Product & Process)**	**Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)**	**Stack/Vent Height (meter)**	**Air Pollution Control Measures (APCM)**
There is/will be no process emission.				

E-4	**Fugitive emission** details with its mitigation measures.

Sr. No	Source	Probable Pollutant Emission	Control Measures/ APCM
FUGITIVE EMISSION			
1	Handling of raw material bags in storage area	Air pollutant (PM)	•Provision of exhaust ventilation •Provision of PPE. •Provision of Job rotation to reduce exposure
2	Solid raw material transferring to reactor	Air pollutant (PM)	Hopper will be provided with powder transfer system.
3	Solvent Recovery System	Air Pollutant (VOC)	• Solvent recovery system with steam condensation system. • Pump are mechanical seal type.
4	Solvent storage tank	Air Pollutant (VOC)	• Carry out workplace area monitoring to find out concentration level in ambient air close handling system. • Provision of breather valve cum flame arrester.
5	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	• Routine &periodic inspection to check leakage. • Preventive maintenance, Follow SOP for maintenance. • Pumps will be mechanical seal type. • LDAR program will be followed. • Provision of Flange guard.
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	• Feeding of liquid raw material will be carried out by closed pipeline and mechanical seal pump.
7	Loading /unloading at storage area	Air pollutant (VOC)	• Unloading through pipeline to tank in a close system.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.

  The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**
-	

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1.	Used Oil	From Machinery	5.1	0.006	0.1	0.106	Collection, Storage, Transportation & Disposal by selling to registered re-processor.
2.	ETP Sludge	From ETP	34.3	00	72	72	Collection, Storage, Transportation & Disposal at TSDF of M/S. BEIL, Ankleshwar.
3.	Discarded containers/ bags/liners	Packing of products & Raw Materials, Process	33.3	00	12.5	12.5	Collection, Storage, Decontamination, within premises and disposal by selling to authorized recycler.
4.	Recover solvent	From Distillation unit	--	00	408	408	Collection, Storage and reuse within premises.
5.	Distillation Residue	From Solvent recovery unit	20.3	00	6	6	Collection, Storage, and disposal at Co-Processing.
6.	Spent carbon	From ETP	36.2	00	04	04	Collection, Storage and disposal at Co-Processing.

7.	RO Membrane	From RO Plant	--	00	05	05	Collection, Storage, Transportation & Disposal at TSDF of M/S. BEIL, Ankleshwar.

-

Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix
	Not applicable
G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Sr. No.	Name of Product	Name of Solvent	Total Quantity of solvent in MT/Month	Quantity of solvent recovered in MT/Month	% Recovery
1.	Disperse Yellow FFL	Acetic acid	14.5	13.9	95.8
2.	Disperse blue FFR	IPA	20	19.4	97.0
3.	Disperse blue BN	IPA	14.3	13.8	96.5
4.	Disperse Violet 26	DMF	18.75	18.0	96.0

G-2	**LDAR proposed:**

Leak Detection and Repair (LDAR) Program

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. In addition to control fugitive emissions, LDAR Program also helps the industries to reduce unwanted losses of chemicals and thereby conserving energy & increasing their profitability.

Following steps shall be followed for effective implementation of LDAR Program:

Identification of volatile chemicals which may contribute in VOCs:

Identification of all the probable sources of leakage, such as valves, pumps, and connectors.
List of the sources of probable leakage is as follows:
Valves/Flanges
Pump glands handling above chemicals
Open vents from the tank top
Pump seals
Compressor seals
Pressure relief devices
Process drains
LPDs (Low Point Drains)
HPVs (High Point Vents)

A list of all such items shall be made and same shall be incorporated in the checklist for LDAR.

Selection of appropriate method for leak detection:

Considering the nature of the chemical; appropriate method shall be selected for leak detection of individual chemicals from the list given below:
Visual Checks (For all chemicals)
LEL meter (For Benzene and Toluene leak detection)
VOC meter (For Benzene and Toluene leak detection)
Gas Detector
Chlorine Torch (For chlorine leak detection), etc.

Scheduling and checklist for Leak Detection:
All points shall be checked as per the checklist given below.

Methods for rectification of identified leaks:
For all identified leaks, closure shall be ensured with the help of maintenance department and records for the same shall be maintained.

G-3	**VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Unit will provide proper solvent recovery system with scrubber and carbon to stop air emission.

Due to Manufacturing process and solvent handling chances of VOC emissions. Entire process and material charging has been carried out in closed loop. Regular work place monitoring will be done. SOP will be followed to handle powder and liquid raw materials

Comments:

- ✓ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- ✓ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	SAFETY details after proposed expansion
H-1	Details regarding storage of Hazardous chemicals

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Sulfuric Acid	20 KL	1	Corrosive

Storage of Hazardous chemicals in Tanks

- MS storage tank provided as per IS code.
- Dyke wall provided to storage tank.
- Level gauge provided with low level high level provided.
- Fire hydrant monitor with foam trolley facility provided.
- FLP type pump provided.
- Double static earthing provided to storage tank.
- Double Jumper clip provided to all pipeline flanges.
- Road tanker unloading procedure prepared and implemented.
- Lightening arrestor, PPEs provided.
- Safety shower, eye washer provided.
- NFPA labelling system adopted for storage tanks.

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Storage details	Name of major Hazardous chemicals	Remarks
Drum/Barrel storage	Acrylonitrile	2 Ton
	Acetic Anhydride	1 Ton
	Isopropyl Alcohol	2 Ton

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	Storage in compatible storage unit with flame proof fitting, also provide firefighting measures. Only trained person allowed to handle
CORROSIVE& CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle
TOXIC CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle

- **Applicability of PESO:** After getting EC, unit will obtain permission of PESO.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives**

Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	**Safety measures including Automation**
There is no any hazardous process involved.	

H-3	**Details of Fire Load Calculation**

Total Plot Area:	1888
Area utilized for plant activity:	400
Area utilized for Hazardous Chemicals Storage:	300
Number of Floors:	G+2
Water requirement for firefighting in KLD:	5 KLD
Water storage tank provided for firefighting in KLD:	100
Details of Hydrant Pumps:	Diesel pump, Jockey Pump and Main Pump
Nearest Fire Station :	3.6 Km
Applicability of Off Site Emergency Plan:	--

Comments:

- ✓ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 100 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Fire NOC document has been prepared and unit will apply shortly.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	30
Number of Contractual person/Labour:	15
Area provided for OHC:	15 Sq. M.
Number of First Aid Boxes:	2
Nearest General Hospital:	Jayaben Modi Hospital
Name of Antidotes to be store in plant:	As below

-

Chemical	**Antidote / Medical Treatment**
Acrylonitrile	• Very careful treatment of cobalt E.D.T.A. (calocynor) and if that is not effective give nitrite/thiosulphate treatment

IPA	• Wash affected skin with plenty of water. • Administer Oxygen or shift to Fresh air, • Don't apply Epinefrin, Ifridin etc. Don't applymilk, vegetable oil or alcohol.
Acetic Anhydride	• Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Organic acids and related compounds

Comments

1. Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

12) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

j) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

k) "No uncovered vehicles carrying construction material and waste shall be permitted."

l) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

m) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

n) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

o) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

p) Grinding and cutting of building materials in open area shall be prohibited.

q) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

r) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS [Continuous Emission Monitoring System] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].
2. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
    c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act,

2016.

d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 80 KLD. Unit shall recycle 33 KLD water in process. Hence, fresh water requirement shall not exceed 47 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
10. The industrial effluent generation from the project shall not exceed 41 KLD after expansion.
11. Management of industrial waste water shall be as under:
    - Total effluent generation shall be 45.5 KLD (Domestic 4.5 KLD + Industrial 41 KLD). In, 6 KLD washing wastewater shall be reused in process. Existing and proposed wastewater shall be treated in unit's own ETP treatment system. 3.5 KLD treated effluent shall be discharged in to M/s. ETL and remaining shall be sent to RO plant (36 KLD). RO permeate (27 KLD) shall be reused and RO reject (9 KLD) shall be sent to CMEE.
    - Unit shall discharge wastewater to GIDC underground drainage leading to CETP of M/s. ETL only after complying with inlet norms prescribed by GPCB and ensuring content of effluent.
12. Domestic wastewater generation shall not exceed 4.5 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
14. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be

furnished to the GPCB from time to time.

AIR:

15. Unit shall not exceed fuel consumption for Boiler, Fluid Bed Dryer and D G Set as per the point no. E-2 as mentioned above.
16. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
17. There shall be no process gas emission from the manufacturing process and ancillary operations.
18. PP shall use approved fuels only as fuel in boilers.
19. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.

21. For control of fugitive emission, VOCs, following steps shall be followed :

    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

22. Solvent management shall be carried out as follows:

    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.

- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

23. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

24. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
25. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
26. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
27. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
28. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

29. The PP shall develop green belt within premises (**[178.75 m2 (19.47%) inside plant premises + 260 m2 (13.77%)** at Common Plot in Ankleshwar GIDC**= Total: 438.75 Sq. m.) i.e. 33.24 % of total plot area]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

30. The project proponent shall carry out the activities (Tree Plantation surrounding the pond of Kosamadi Village) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
31. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Jyoti Om Chemical Research Centre Pvt. Ltd. and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

32. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
33. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
34. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
35. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
36. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
37. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
38. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

9.	SIA/GJ/IND2/66408/2021	**New Tech Polychem Pvt. Ltd.** Plot No. C-364, Saykha-GIDC, Taluka: Vagara, District: Bharuch, Gujarat	Appraisal

Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND2/66408/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	27/09/2021

1.5. Documents Submitted by Project Proponent(PP)	Final EIA Report with Annexure and its related documents, FORM-2, EMP
1.6. TOR No. & Date :	SIA/GJ/76404/2021; Dated: 03-04-2021
1.7. Technical expert / Environmental Consultant :	Paramarsh (Servicing Environment & Development)
1.8. SEAC Meeting No. and Date:	315th SEAC meeting and Date: 29-11-2021
1.9. Compliance of Existing EC & CCA	Not Applicable as it is a new project

2) Project proponent has submitted EIA Report prepared by M/s. Paramarsh (Servicing Environment & Development) based on the TOR issued by SEIAA.

3) This is a proposed new unit for manufacturing of synthetic organic chemicals as mentioned below:

Sr. No.	Name of the Products	CAS / CI no.	Quantity MT/Month	End-use of products
1.	Pure Acrylate	--	200	Use in paint and construction industry
2.	Paints Binder	--	500	Use in paints industry
3.	Paper Binder	--	500	Use in paper and packaging industry
4.	Textile Binder	--	250	Use in textile industry
5.	Construction Chemical	--	250	Use in construction industry
6.	Stone Binder	--	300	Use in textile industry
7.	Synthetic Adhesive	--	900	Use in wood, textile, paint industry
8.	Acrylic Polymers	--	1000	Use in wood adhesives, textile, paint, construction, adhesives industry
9.	Vinyl Polymers	--	1000	Use in wood adhesives, textile, paint, construction, adhesives industry
10.	Surface Sizing For Paper	--	300	Use in Paper industry
11.	Retention Aid(Acrylamide Polymer)	--	400	Use in paper, water treatment, steel industry
12.	WSR (Wet Strength Resin)	--	300	Use in paper, water treatment, steel industry
13.	Acrylate Styrene Emulsion	--	1000	Use in wood adhesives, textile, paint, construction, adhesives industry
14.	Cationic Surface Sizing	--	300	Use in paper industry
15.	Styrene Butadiene Emulsion	--	1000	Use in wood adhesives, textile, paint, construction, adhesives industry

16.	Poly Urethane (PU) Resin Dispersion	--	250	Use in wood adhesives, textile, paint, construction, adhesives industry
17.	Ethylene Vinyl Acetate Emulsion	--	500	Use in wood adhesives, textile, paint, construction, sealant, coating, adhesives industry
18.	High Impact Poly Styrene Resin	--	500	Use in texture, yogurt containers, plastic cutlery, salad bowls, refrigerator lining, medical and electrical insulation
19.	Unsaturated Polyester Resin	--	250	In production of fiber reinforced plastics and filled plastic products, high performance components for Marine and transportation industry
	Total		**9700**	

4) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
5) The proposal was considered in the SEAC video conference meeting dated 29.11.2021.
6) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
7) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
8) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March-2021 to May-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).
9) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
10) Committee noted the following:
    - ✓ Site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
    - ✓ Complete zero liquid discharge will be maintained.
11) PP presented salient features of the project including Water, Air and Hazardous waste management are

as under:

Sr. no.	Particulars	Details
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Total Project
Rs. 35 Crores

Break-up of proposed project Cost:

Sr. No.	Description	Cost (Rs. in Crores)
1.	Land & land development	7
2.	Factory Building & Office	5
3.	Plant & Machineries	21
4.	EMP including (ETP, Evaporator APCM, Greenbelt and Fire Fighting Arrangements etc.)	2
	TOTAL PROJECT COST	**35**

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A-2	**Details of Environmental Management Plan (EMP)**	As below:

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Sr. No.	Environmental Management Aspect	Capital Cost [Rs.]	Recurring Cost/Annum [Rs.]	Remarks
1.	**Air Pollution** (APCM i.e. multi cyclone, bag filter, water scrubber stack monitoring facility & other supporting features)	20,00,000	2,50,000	Capital cost will include air pollution control devices and the recurring cost will include operation and maintenance of pollution control devices and stack emission monitoring & sample analysis charges.
2.	**Water Pollution** (Stripper, MEE, ETP, RO and Evaporation system online monitoring system etc)	25,00,000	7,80,000	Capital cost will include cost of ETP & Evaporation system etc. and recurring cost will include maintenance charges, manpower salary, sample analysis charges & cost for operating ETP etc.
3.	**Noise Pollution** (Acoustic enclosure, vibration pad, PPE etc)	50,000	25,000	Capital cost will include providing adequate sound enclosures and recurring cost will include monitoring of noise level.
4.	**Hazardous / Solid Waste Management** (storage area for	3,00,000	1,00,000	Capital cost will include expense for providing storage area for hazardous waste and recurring cost will

	hazardous waste, TSDF/ CHWIF Membership)			be for solid/ hazardous waste packing & its disposal and for the membership of TSDF site.
5.	**Green Belt** (Tree plantation, maintenance)	3,25,000	1,50,000	Capital cost will include development of green belt within and outside the project premises and recurring cost will include maintenance charges, manpower salary etc.
6.	**Occupational Health & Safety** (PPE; first Aid; system, medical facility, safety training /awareness and safety audit etc)	7,50,000	5,00,000	Capital cost will include cost of OHS Centre, stock/storage of PPE kits (safety helmet, safety glasses, gloves, safety shoes, first aid kit, protective jacket, Anti dots) and recurring cost will include maintenance charges medical check-up etc.
7.	**Fire & Safety and DCS system** Firefighting system and plant automation /DCS system	45,00,000	6,75,000	Capital cost will include cost of Firefighting system, DCS system ,water storage tank (for fire), Automatic Sprinkler system, jockey pumps for fire system, Fire extinguisher (Dry Chemical Powder, Foam, Water, CO2 type, Sand Bucket Stand), Fire Hydrant Post, Hose Pipe, Safety boards, Safety shower, Eye Wash fountains, SOP for chemical hazards management, LDAR system, Mock drill / Training of emergency preparedness plan, and Medical Facility and recurring cost would include their maintenance charges, audits.
8.	**Miscellaneous** (QMS/EMS/OHAS system implementation, certification & monitoring audit etc.)	7,25,000	4,50,000	Capital cost would include expense for Miscellaneous activity such as QMS/ EMS/ OHAS system management implementation, certification, rain water harvesting and recurring cost would include its renewal/ maintenance, audit etc.
	Total	**1,11,50,000**	**29,30,000**	

Comments:

- ✓ The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

1. Provision of solar lights in the villages
   - Solar light, at common property of surrounding villages at Argama, Dayadra, Derol, Kelod villages
2. Swachch Bharat Mission (SBM)
   - Funds for One door to door waste Collection Vehicle & OWC/ vermicompost unit to the Village Panchyat of Argama, Ankot, Saladra villages
3. Ensuring Safe drinking water
   - Provision of supply of drinking water facility in terms of RO, water treatment system at common place (viz. village panchayat office/anganawadi etc) of Aragama, Vagra, Vorasamni and Vansi villages
4. Infrastructure development/ repair and tree plantation
   - Rain water harvesting structure / village's pond renovation & Tree plantation at Vagra, Saladra villages
   - Fund for provision / repair of drainage system at Rahad village

B	**Land / Plot ownership details:** GIDC plot allotment vide letter no.: GIDC/RM-I/ANK/SYKH/ALT/3143
B-1	**Plot area** **Total Plot area**: **11,776.6 Sq. m.** -
B-2	**Area adequacy** ➢ Available land area is adequate for this project. 1. Total plot area is 11,776.6 m^2. 2. Admin/Laboratory/OHC building will be G+3 floors and Thus Total area including all floors will be (480 + 165 + 165 + 165). = 975 m^2 3. 3 nos. Production plant of 11,850 m^2 area will be provided. Each plant having G+3 floor. Thus total production plant area: Plant – 1: (1000 + 1000 + 1000 + 1000) = 4000 m^2 Plant – 2: (962.50 + 962.50 + 962.50 + 962.50) = 3850 m^2 Plant – 3: (1000 + 1000 + 1000 + 1000) = 4000 m^2 Total Production Plant Area = 11850 m^2 4. Unit will produce Max. 19 products at a time the proposed production capacity will not exceed 9700 MT/Month. 5. Total floor area utilized for production activity: 7110 m^2 which is below than

11850 m^2 area proposed.

6. 362.50 m2 area will be allotted for raw material storage having G+3 floor. Thus Total RM Storage will be 1450 m2
7. 362.50 m2 area will be allotted for finished product storage having G+3 floor. Thus Total finished product Storage will be 1450 m2
8. For utilities 310 m^2 area will be allotted.
9. For ETP facility 107.78 m^2 area will be allotted.
10. For Tank Farm 110.37 m^2 area will be allotted.
11. Separate 50 m^2 area will be allotted for storage of hazardous/solid waste.
12. For goods carrier movement, 6.00 m to 8.00 m marginal road will be provided in plant area.
13. Total area required for raw material storage is 806.05 m2 which is below than 1450 m2 area proposed. Thus, area allotted for storage of raw materials is adequate.
14. Separate Cylinder Storage area 15.8 m2 required which is below than 30 m2 area proposed in RM storage area. Thus, area allotted for storage of cylinder is adequate
15. Total **area required** for drum/bags storage of **finished products is 1370.61 m^2, which is below than 1450 m^2** area proposed. **Thus, area allotted for storage of finished products is adequate.**

Sr. No.	Description	Area (m^2)				
		G. F.	F. F.	S. F.	T. F.	Total
1	Security Cabin	9.81	--	--	--	
2	Office / Laboratory / OHC	480.00	165.0	165.0	165.0	975.0
3	Raw Material Ware House	362.50	362.50	362.50	362.50	1450.0
4	Finished Goods Ware House	362.50	362.50	362.50	362.50	1450.0
5	Plant – 3	1000.00	1000.00	1000.00	1000.00	4000.0
6	Tank Farm Area	110.37	--	--	--	
7	U/G Water Tank	66.00	--	--	--	
8	Fire Water Tank	84.00	--	--	--	
9	Plant – 2	962.50	962.50	962.50	962.50	3850.0
10	Plant – 1	1000.00	1000.00	1000.00	1000.00	4000.0
11	Utility Area	310.00	--	--	--	
12	Hazardous Waste Room	50.00	--	--	--	
13	ETP Area	107.78	--	--	--	

14	Green Belt Area	3886.28	--	--	--	
15	Open / Road Area	2984.86	--	--	--	
	Total	**11776.6**	**3852.5**	**3852.5**	**3852.5**	

- Hence, adequate area is available for proposed new Facility.

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 **Green belt area**

	Total (Sq. meter)
Area in Sq. meter	3886.28
% of total area	33%

Comments:

The condition shall be given that -

The PP shall develop green belt (3886.28 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C **Employment generation**

Total
100 Nos

-

D **WATER**

D-1 **Source of Water Supply**

- GIDC Water supply.

Comments:

- Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

-

Sr. No.	Purpose	Water Consumption Quantity (KL/Day)		
		Fresh Water	Treated Water Recycled	Total
A.	**Domestic**	**5**	**--**	**5**
B.	**Industrial**			
	• Process	136	--	136
	• Boiler	15	--	15
	• Cooling	18	--	18
	• Washing	1	--	1
	Sub-Total: (B)	**170**	**--**	**170**
C.	**Gardening**	**4**	**8**	**12**
TOTAL (A+B+C)		**179**	**8**	**187**

-

Comments:

- ✓ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

Sr. No.	Purpose	Wastewater Generation Quantity (KL/Day)	Remarks
A.	**Domestic**	**4**	• will be collected and sent to ETP for further treatment and treated water will be reused for gardening within premises.
B.	**Industrial**		
	• Process	NIL	• Our mfg. process is such that there is no process effluent generation.
	• Boiler	1.5	• will be collected and sent to ETP/ RO/ Evaporator for further treatment and treated water will be reused for gardening within premises.
	• Cooling	1.8	
	• Washing	1	
	Sub-Total: (B)	**4.3**	
C.	**Gardening**	Nil	
TOTAL (A+B+C)		**8.3**	**ZERO LIQUID DISCHARGE (ZLD) System**

-

Comments:

	✓ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

4 KLD Domestic Waste Water will be collected and treated in ETP along with other effluent.
Comments:

- ✓ Domestic wastewater generation shall not exceed 4 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
- ✓ Unit shall provide ETP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

Sr. no.	**Quantity**	**Facility**
1	4.3	Will be collected and sent to ETP/ RO/ Evaporator for further treatment and treated water will be reused for gardening within premises.
Total	**4.3**	

Comments:

Total Industrial Effluent (4.3 KLD) will be generated consisting [Boiler blow down (1.5 KLD), Cooling Purge (1.8 KLD) and Washing (1 KLD)], and domestic wastewater (4 KLD) will be mixed with industrial effluent which will be treated in an on-site ETP followed by RO system. RO permeate will be recycled / reused in gardening purpose and RO reject will be sent to Steam Jacketed Evaporator system and condensate from evaporator (1.4 KLD) will be reused bottom salt (0.3 KLD) will be sent to TDFS site. Thus, unit will maintain **ZERO LIQUID DISCHARGE (ZLD).**

4. Industrial effluent shall be segregated into two streams (1) Concentrated (2) Dilute stream shall be treated as below.
   - ✓ **Concentrated Stream (1.7 KLD)**
     - ➢ There shall be no process effluent generation.
     - ➢ 1.7 KLD (RO reject) concentrated stream shall be generated from post ETP RO which shall be sent to in-house steam jacketed evaporator system and its bottom salt send to TSDF site. RO condensate and condensate from evaporator shall be reused in gardening purpose within premises.
     - ➢ Unit shall treat wastewater to in-house ETP/RO & steam jacketed evaporator system and ensuring content of effluent for COD/BOD so as not to get air borne

during evaporation in order to achieve no adverse impacts on Environment and Human Health.

✓ **Dilute Stream (8.3 KLD):**

- Dilute stream effluent from washing (1 KLD), boiler blow down (1.5 KLD), cooling purge (1.8 KLD) and domestic effluent (4 KLD) shall be treated in ETP consists of primary, secondary and tertiary treatment units followed by RO to remove organic matter etc.
- RO permeate and condensate from evaporator (8 KLD) shall be reused for gardening purpose within premises.
- Treated wastewater shall be reused for gardening purpose within premises only after complying with norms prescribed by GPCB to ensure no adverse impact on Human Health and Environment

5. Unit shall provide ETP with adequate capacity.

E	**AIR**
E-1	Power (Electricity) requirement : **0.5 MW**
E-2	**Flue gas emission details**

-

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Steam Boiler (2 TPH x 2) [one working & one standby]	30	Agro Briquettes / Imported Coal	8 MT/Day	Particulate Matter SO_2 NO_X	Multi cyclone + Bag Filter+ Water Scrubber
2	Steam Boiler (850kg/hr x 2) [one working & one standby]	30				Multi cyclone + Bag Filter+ Water Scrubber
3	D. G. Set* (250x2 KVA)	11	HSD	120 Lit/ Hr.		Adequate Stack Height

-

E-3	**Process gas**

-

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Not Applicable. Our manufacturing process is such that, there will be no any process gas emission generation from the manufacturing of the above said products.				

-

E-4	**Fugitive emission** details with its mitigation measures.

Sources of fugitive emissions include storage of chemicals, loading and unloading section, raw material handling, and hazardous waste storage area.

Mitigation Measures:

- Water will be sprinkled during the construction.
- Mechanical seals for pumps etc. will be used and maintained.
- Closed unloading, conveying and packing system.
- All the reactors will be closed.
- Safety devices will be provided to workers.
- Raw material will be stored in closed storage area. Adequate ventilation system will be provided.
- Raw materials will be stored in isolated storage area and containers will be kept tightly closed. To minimize fugitive emission, powder material will be allowed in a vessel through closed loop while liquid material will be charged through closed pipeline.
- Manufacturing activity will be carried out in closed reactors / vessels and regular checking and maintenance of the same will be carried out to avoid any leakages.
- Transportation of raw materials & products will be carried out by trolley within premises and minimum manual material handling will be carried, so the fugitive emission due to process activity and material handling will be minimized.
- To minimize fugitive emission due to vehicle movement, regular water sprinkling will be carried out on road and paved road will be maintained.

Comments for E2, E3 & E4:

- ✓ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- ✓ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

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Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/ Annum)	Management of HW
1	ETP Sludge + Evaporation Residue	ETP	Sch.-I,35.3	5	Collection, storage and disposal at TSDF site.
2	Process	Mfg. Process	Sch.-I,23.1	1	Collection, storage and

	Waste (Wastes or residues)				disposal at CHWIF site
3	Used / Spent Oil	Plant & Machineries	Sch.-I,5.1	2.5	Collection, storage and use within premises as a low-grade lubricants and /excess quantity (if any) sell to registered recycler
4	Discarded Bags/ Drums/ Containers	Raw Material Storage Area	Sch.-I,33.1	110	Collection, storage and send back to raw material supplier and or to an authorized recycler
5	Cotton rags or other cleaning material	Mfg. Process	Sch.-I,33.2	1	Collection, storage and disposal at CHWIF site

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Comments:

- ✓ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- ✓ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 288 MTPA; which will be Collected, Stored and send to cement manufacturing unit / bricks manufacturer
- ✓ MSW generation will be 9 MTPA; which Collected; Stored and send to an onsite OWC and its manure will be used for gardening within premises

Comments:

1. Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit shall be Collected, Stored and send to cement manufacturing unit / bricks manufacturer
2. MSW generation shall be Collected; Stored and send to an onsite OWC and its manure will be used for gardening within premises

G	**Solvent management**, VOC emissions etc.
G-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

- ➢ **Not Applicable as there will be no use of Solvents in manufacturing process**

G-2	**VOC emission** sources and its mitigation measures

- Close handling system and material transfer pumps with mechanical seals will be adopted.
- Source: VOCs generation will be from storage and usage of raw materials.
- VOC analyzers will be provided to detect any leakages during storage and handling.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs. Ensure minimum number of flanges, joints and valves in pipelines.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading, and transfer area shall be collected through hoods and ducts by induced draft and controlled by dust collector.

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G-3	**LDAR proposed:**

Sr. No.	Component	Frequency of monitoring	Repair schedule
1	Valves/ Flanges	Quarterly (semiannual After two consecutive periods with < 2% leaks and annual after 5 periods with < 2% leaks)	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for general hydrocarbons.
2	Heat Exchangers	Quarterly	
3	Process drains	Annually	
4	Pump seals	Quarterly	
5	Pressure relief devices	Quarterly	
6	Components that are difficult to monitor	Annually	
7	Pump seals with visible liquid dripping	Weekly	Immediately
8	Any component with visible leaks	Weekly	Immediately
9	Any component after repair/ replacement	Within a week	-

- Physical inspection will be done for heavy liquids below the vapour pressure thresholds. Physical inspections rely on the visual detection of dripping liquids.
- In addition, monitoring methods may be judiciously employed for detection of leaks using Photo ionization detector (PID) or flame ionization detector (FID) Instrumental method of measurement of leaks/ Audio, visual and olfactory (AVO) leak detection/Soap bubble method. And data on time of measurement & concentration value for leak detection; time of repair of leak; and time of measurement & concentration value after repair of leak will be documented for all the components.
- LDAR system will be adopted; which mainly includes preventive / maintenance / monitoring schedule of all potential source of leakages / emissions viz, pumps, valves, flanges, etc. More details are presented in EMP.
- Close handling system and material transfer pumps with mechanical seals will be adopted.
- In warding, storage and consumption of chemicals in various products shall be measured through Level Transmitters and Load cells weighing systems resp. The quantity at each stage shall be reconciled periodically to arrive at Losses.

- Periodic monitoring of work area will be carried out to check the fugitive emission.

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Comments:

1. Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
2. Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Styrene Monomer	30	1	Flammable
2	Butadiene	30	1	Flammable
3	Butyl Acrylate Monomer (BAM)	30	1	Flammable
4	Vinyl Acetate Monomer (VAM)	30	1	Flammable
5	Ethyl Acrylate	30	1	Flammable
6	Methyl Metha Acrylate (MMA)	30	1	Flammable

Storage of Hazardous chemicals in Tanks

- Class A petroleum products will be received through road tanker and stored in underground storage tank as per petroleum rules.
- Tank farm will be constructed as per explosive department requirement and separate ion distance will be maintained.
- Adequate dyke capacity will be provided.
- Static earthing provision will be made for road tanker as well as storage tank.
- Flame arrestor with breather valve will be provided on vent line.
- Road tanker unloading procedure will be prepared and implemented.
- Fire load calculation will be done and as per fire load Hydrant System will be provided as per NFPA std. and Fire extinguishers will be provided as per fire load calculation.
- Spark arrestor will be provided to all vehicles in side premises.
- Flame proof type equipment s and lighting will be provided.
- Trained and experience operator will be employed for tank farm area.
- NFPA label (hazard identification) capacity and content will be displayed on storage tank.
- Temperature, Pressure indicator with auto alarm system and safety valve will be provided with storage Tank. Auto Inhibitor pump assembly will also be connected with storage tank to control self polymerization (if any) in adverse condition.
- Each tank will be equipped with chilled water - jacketed wall to maintain the temperature below 25 °C . Each tank connected to blower to suck the air/vapour (if any) in the tank and which will be connected to tank containing water to absorb the same and water tank finally is facilitated with a heighted stack.
- Chemicals will be transferred through pump only in plant area and day tank will be provided. Overflow line will be return to the storage tank or Pump On-Off switch will be

provided near day tank in plant.

- Jumpers will be provided on chemicals handling pipe line flanges.
- Flexible SS hose will be for road tanker unloading purpose and other temp connection.
- Two additional empty spare chemical storage tanks of 30 KL (Tank's MOC, SS-304) will be provided for chemical storage purposes in case of any emergency.

Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

- Some chemicals will be received at plant in drums by road truck and stored in a separate drum storage area.
- PESO approved drum storage area will be made.
- Auto Sprinkler system will be provided in drum storage area.
- Gas detectors for flammable material will be provided in drum storage shed.
- Fire hydrant system as per NFPA and related norm will be installed.
- Smoke detect ion system will be provided.
- FLP (Flameproof Light Fittings) type light fittings will be provided.
- Conductive type Drum pallets with containment tray will be provided.
- Proper ventilation system will be provided.
- Proper label and identification board /stickers will be provided in the storage area.
- Drum handling trolley/stackers/fork lift will be used for drum handling.
- Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.

Storage of Acid and Alkali Chemicals:

- Caution note and emergency first aid measures will be displayed and train for the same to all employees.
- Carbouys will be stored away from the process plant.
- Caution note and emergency handling procedure will be displayed at unloading area and trained all operators.
- NFPA label will be provided.
- Required PPEs like full body protection PVC suit, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator.
- Neutralizing agent will be kept ready for tackle any emergency spillage.
- Safety shower, eye wash with quenching unit will be provided in acid storage area

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Explosive	✓ Standard Operating procedure shall be made for before Gas charging into reactor and after completion of reaction ✓ SOP will be prepared and operators will be trained for the same.. ✓ Safety valve and Rupture disc will be provided on reactor. ✓ Safe Catalyst charging method will be adopted. ✓ Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level.

	✓ Static earthing and electric earthing (Double) will be provided. ✓ Gas detector will be installed for early detection of gas leak.
Toxic and Corrosive	✓ Storage area have cross air ventilation, no direct sun light, storage temp. below 40 deg. C. ✓ Containers which are opened must be carefully resealed and kept upright to prevent leakage. ✓ Charging in reactor shall be carried out through vacuum pump. ✓ Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. during handling using protective gloves/ protective clothing/ eye protection / face with proper respiratory protection. Proper label and identification board /stickers will be provided in the storage area. Safety showers and eye wash stations will be installed near the storage area.
Flammable	✓ Keep in a dry, cool and well-ventilated place. Keep Tank tightly closed in a dry and well-ventilated place. ✓ Keep away from heat and sources of ignition. Flammables area. ✓ Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Remove all sources of ignition. Use only non-sparking tools. ✓ Wash hands before breaks and immediately after handling the product. Keep away from open flames, hot surfaces and sources of ignition. ✓ To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. ✓ Dyke wall will be provided at tank storage area.

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- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals. the required / applicable PESO permission (for chemicals that will be stored in Tanks) from the concerned authority prior to applying / obtaining the Consent to Operate (CC&A) from Gujarat Pollution Control Board.

Comments:

- ✓ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The **Petroleum and Explosives Safety Organization** (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Process Safety:

- DCS / SCADA control system for the proposed facilities. Any rise in temperature, pressure etc.

will be indicated with alarm followed by necessary corrective action. Also provided Safety interlocks and redundancy in DCS.

- All vessels & storage tanks will be provided with high level alarms and necessary pump tripping system.
- Gas leak detection & alarm system will be provided for chemical usage area.
- Fire water tank & fire hydrant piping will be provided for entire plant with ring mains for all plants/tank farm etc. Jet monitor with foam trolley / hydrant points / fire extinguisher etc. will be provided at strategic points.
- All chemicals will be stored in PESO licensed area with all regulatory requirements.
- Standby DG power will be provided for all process requirements.
- HSE management system will be fully implemented. All procedures like work to permit, Tanker loading and unloading, Accident investigation,
- Preventive maintenance schedule, Static earthing and electrical earthing, etc. will be prepared and implemented.
- The reaction will be carried by heating, cooling, chilling, brine as a utility through jackets/limpet coils.
- Control loops for control of pressure and temp. in the reactors will be provided.
- PRV will be provided from steam boiler high pressure line to control required pressure in reactor jacket.
- Utility like Chilling, cooling, vacuum, steaming and its alternative will be provided to control reaction parameters in a safe manner.
- Free Fall of any flammable material in the vessel will be avoided.
- Static earthing provision will be made at design stage to all chemicals handling equipments, reactors, vessels & powder handling equipments.
- Vent line connected with reflux unit or condenser in case of VOC or with scrubber in case of toxic gas generation in reaction.
- All emergency valves and switches and emergency handling facilities will be easily accessible.
- Further all the vessels will be examined periodically by a recognized competent person under the Factory Rules 1963-Rule 61(1).
- All the vessels and equipments will be well earthed appropriately and well protected against Static Electricity. Also for draining in drums proper earthing facilities provided.
- Materials transferred by pumping through pipeline from tanks.
- Flame proof light fittings will be installed in the plant.
- All the Plant Personnel will be provided with Personal Protection Equipments to protect against any adverse health effect during operations, leakage, spillages or splash. PPE like Helmets, Safety Shoes, Safety Glasses, Acid-Alkali Proof Gloves etc. provided to the employees as per needs. All employees trained and updated in Safety aspects through induction and periodic training in safety.
- Material Safety Data Sheets of Raw Materials & Products will be readily available at shop floor
- All reaction vessels will be connected with a cooling vessel to transfer the material by gravity in case of runaway reaction. Secondly the reaction vessels are equipped with safety valve connected with flame arrester followed by a Activated Carbon column and its outlet connected with water tank.
- Secondly, the vessel is also connected with a condenser system to cool and reuse the gaseous / vapour if any
- Temperature, Pressure indicator with auto alarm system and safety valve will be provided.
- Auto Initiator pump assembly will also be connected to control the runaway reaction

- Auto Inhibitor pump assembly will also be connected to control the runaway reaction as well as all the vessels are connected with water line to control rapid / unregulated polymerization (if any) in adverse condition.

Exothermic Reaction:

- Exothermic reaction will be controlled by adequate dosing of reaction chemicals in a fixed time (not short duration) having adequate cooling water circulation in jacket of reaction vessels. Thus, any energy generated due to exothermic reaction will be controlled by external cooling circulation and therefore vessels will not be pressurized
- Reactant mass in reactor should be added such that surface-to-volume ratio is maintained and runaway reaction is prevented.
- Cooling – jacketed system for the reactor should be in place to maintain the reaction temperature.
- All the chemicals / hazardous chemicals will be stored as per PESO / Safety guidelines.
- Auto control system like DCS system will be provided.

H-3 Details of Fire Load Calculation

Total Plot Area:	11,776.6 m^2
Area utilized for plant activity:	16,313 m^2
Area utilized for Hazardous Chemicals Storage:	1560.37 m^2
Number of Floors:	G+3
Water requirement for firefighting in KLD :	47.12
Water storage tank provided for firefighting in KLD:	320
Details of Hydrant Pumps:	Yes, Two electrical (180 liter/min) and one diesel pump (2280 liter/min) at 7.5 kg/cm^2 pressure.
Nearest Fire Station :	Bharuch Nagar Palika Fire Station is approx. 26 km away from the project site.
Applicability of Off Site Emergency Plan:	--

Comments:

1. The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of **320 KL.** SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

- Unit will take Fire NOC certificate from concern authority.

H-5 Details of Occupational Health Centre (OHC):

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Number of permanent Employee :	100 Nos.
Number of Contractual person/Labour :	--
Area provided for OHC:	165 m^2
Number of First Aid Boxes :	25 Nos.

Nearest General Hospital :	General Hospital: at Bharuch Approx. 26 km away from the project site
Name of Antidotes to be store in plant :	Required antidotes will be available at site. And the required antidotes will be facilities as per the doctors prescription

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Comments

1. Project proponent has provided Occupational health center with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

12) DELIBRATION AND RECOMMENDATION:

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and unanimously recommends the same to SEIAA for Environmental Clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust

mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. There shall be no use of solvents for the manufacturing of proposed products.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**

    a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
    b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
    c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
    d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
    e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
    f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
    g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
    h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall provide water sprinkler to the chemical storage area/tank farm area, process plan area etc.

k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

l) Unit shall provide effective fire hydrants, water monitors & foam application system at hazardous chemical storage area/process area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in hazardous chemical storage area/process area.

m) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 187 KLD. Unit shall recycle 8 KLD treated water in gardening purpose. Hence, fresh water requirement shall not exceed 179 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
10. The industrial effluent generation from the proposed project shall not exceed 4.3 KLD.
11. Management of industrial waste water shall be as under:
    - Total Industrial Effluent shall be treated in an on-site ETP followed by RO system. RO permeate shall be recycled / reused in gardening purpose and RO reject shall be sent to Steam Jacketed Evaporator system and condensate from evaporator shall be reused bottom salt shall be sent to TDFS site. Thus, unit shall maintain **ZERO LIQUID DISCHARGE (ZLD).**
    - Total industrial effluent shall be treated in ETP consist of primary, secondary and tertiary ETP units and then treated effluent complying norms prescribed by GPCB shall be reused in gardening purpose within premises.
    - Unit shall treat wastewater to in-house ETP/RO & steam jacketed evaporator system and ensuring content of effluent for COD/BOD so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.
12. Domestic wastewater generation shall not exceed 4 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
14. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

15. Unit shall not exceed fuel consumption for Boiler and D G Set as per the point no. E-2 as mentioned above.
16. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by

GPCB.

17. There shall be no process gas emission from manufacturing process.
18. PP shall use approved fuels only as fuel in boilers.
19. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
21. For control of fugitive emission, VOCs, following steps shall be followed :

    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
    - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

22. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

23. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
24. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
25. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
26. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
27. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of

potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

28. The PP shall develop green belt within premises (3886.28 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

29. The project proponent shall carry out the activities (Solar light, at common property of surrounding villages at Argama, Dayadra, Derol, Kelod villages, Funds for One door to door waste Collection Vehicle & OWC/ vermi-compost unit to the Village Panchyat of Argama, Ankot, Saladra villages, Provision of supply of drinking water facility in terms of RO, water treatment system at common place (viz. village panchayat office/anganawadi etc) of Aragama, Vagra, Vorasamni and Vansi villages, Rain water harvesting structure / village's pond renovation & Tree plantation at Vagra, Saladra villages, Fund for provision / repair of drainage system at Rahad village) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
30. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Paramarsh (Servicing Environment & Development) and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

31. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.
32. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
33. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
34. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
35. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.

36. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
37. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

The meeting ended with a vote of thanks to the chair.

***

Minutes approved by:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC	
2.	Dr. S. C. Pant, Vice Chairman, SEAC	
3.	Dr. M. N. Patel, Member, SEAC	
4.	Shri D. C. Chaudhari, Member, SEAC	
5.	Shri J. K. Vyas, Member, SEAC	
6.	Shri Anand Zinzala, Member, SEAC	
7.	Shri B. M. Tailor, Member, SEAC	
8	Shri A. V. Shah, Secretary, SEAC	